THE BUILDER

A Journal for the Architect & Constructor

APRIL 27, 1928 — No. 4447

LEADING CONTENTS

ILLUSTRATIONS

INSET PLATES :

Durham Cathedral : Durham Light Infantry Memorial Chapel, South Screen. Mr. W. D. Caröe, F.R.I.B.A., Architect.

"The Lodge," Bedfont House, Walton-on-Thames. Messrs. A. Purcell Lay, A.R.I.B.A., and Will Kidd, Architects.

Aerial View of the Foord Almshouses, Rochester. Mr. E. Guy Dawber, A.R.A., P.P.R.I.B.A., Architect.

Chapel, Bishop's Hostel, Lincoln. The late Temple Moore, Architect.

PAGE

The Sovereign's Throne, Chapel of St. Michael and St. George, St. Paul's Cathedral. Mr. M. E. Macartney, F.R.I.B.A., Surveyor to the Cathedral. Mr Henry Poole, A.R.A., Sculptor 718-720

First National Bank, Jersey City, New Jersey. Mr. Alfred C. Bossom, F.R.I.B.A., Architect 721

Stained-glass Window in Memory of Henry Hudson, the Explorer, St. Ethelburga's Church, Bishopsgate. By Mr. Leonard Walker, R.I. 722

The Nave, Hexham Abbey, Northumberland. The late Temple Moore, Architect 723

The Salle Pleyel, Rue du Fauborg, Saint-Honoré, Paris. M. Gustave Lyon, Engineer, in conjunction with M. Aubertin and MM. Granet and Mathon, Architects 729-731

Grove Park Housing Scheme, Lewisham. Mr. W. R. Davidge, F.R.I.B.A., Architect 732-736

PAGE

Conversion of Warren Farm Outbuildings, Effingham, Surrey, into Cottages and Club Room. Messrs. A. Purcell Lay, A.R.I.B.A., and Will Kidd, Architects 737

Modern American Architecture Designs. By Mr. Alfred C. Bossom, F.R.I.B.A. 738

ARTICLES

Leader : Housing 719

Notes ..... 720 & 721

General News 722

R.I.B.A. : Work of Temple Moore 723 & 724

"The Builder" Debate 724

Repair of Ancient Buildings—XVII. By A. R. Powys, A.R.I.B.A. 725 & 726

Notes on Illustrations 727

Correspondence 727

Grove Park Housing Scheme 736

American Architecture ..... 739 & 740

A Paris Concert Hall 740

London Society : Some Features of Underground London 741

Legal Section 742

Societies and Institutions 743

Legal Questions We Have Been Asked—XVII. By W. T. Creswell 744

Week in Parliament 744

Architects' and Builders' Inquiry Bureau 745

Everyday Science for Architects and Builders—XVI. By A. M. Giles... 746

The Building Exhibition..... 747

Institute of Clayworkers' Annual Dinner 747

Builders' Clerks' Benevolent Institution 748

Rates of Wages in the Building Trade... 749

Contracts, Competitions, etc. 750-752

Proposed New Buildings and other Works ..... 752 & 753

Tenders ..... 753, 757 & 758

Published every Friday

THE BUILDER LIMITED

CATHERINE STREET AND YORK STREET, ALDWYCH, LONDON, W.C.2

Telephone : Regent 5940-1

86TH YEAR

The Sovereign's Throne, Chapel of St. Michael and St. George, St. Paul's Cathedral.

Mr. Mervyn E. Macartney, F.R.I.B.A., Surveyor to the Cathedral.
Mr. Henry Poole, A.R.A., Sculptor.

THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

VOL. CXXXIV. No. 4447. APRIL 27, 1928.

HOUSING

FROM time to time we have drawn attention to the housing activities of the London County Council. Under its auspices there has now been issued a comprehensive housing handbook* describing in detail the various post-war schemes undertaken by the Council. It is a record of facts and experience, and shows an earnest endeavour to interpret the needs and habits of the people in a humane and enlightened spirit.

We realise that it is not the purpose of a handbook of this nature to submit theories and deductions upon the broad question of housing or upon the social problem in its relation to industrialism. The Council and its technical advisors have dealt with the conditions as they found them, and have applied solutions that reach forward towards higher ideals in housing. It is from records of this nature—as impersonal as blue-books—that we often learn the most. A bare chronicle of what is being done in housing—as apart from what might be done—stands out as something real amidst a welter of abstract theorising. It represents to us just the difference between doing the work that lies to hand as best as we can, while others in proclaiming an ideal appear to us to be waiting for the millennium. Obviously we do not mean that ideals are irrelevant moonshine; on the contrary, we can hold to an ideal believing that there are many methods of reaching it, even if they are mostly compromises. Practical idealism is, we believe, the familiar label for this attitude, but it is an honest attitude nevertheless. This is the moral we gather from the housing activities of the London County Council.

We note the frank comment in the preface that the housing standards of to-day will not necessarily be those of to-morrow. If this plain piece of advice were more often taken to heart, we would suffer less in the future from those who think they have discovered not only a housing solution, but a social development applicable for all time and for every circumstance. For reasons of protection our mediæval ancestors favoured what we now regard as over-crowded towns; for perhaps less valid reasons later generations continued to over-crowd. Frankly, we find it difficult to believe that our forefathers deliberately made the slums knowing that they were harmful. At the time their ideas may have seemed good to them, in comparison with those of a previous age, and if we find this difficult to believe we must assume that the laws permitting certain conditions were at least indicative of the age. It is worth remembering, too, that a generation not yet died out would not have tolerated conditions such as these:—"All rooms are eight feet six inches high, except the bedrooms in the roof, which are eight feet high." Backed up by medical opinion, our forefathers insisted on lofty ceilings. It was a mistaken idea, we know now, but the intentions were good. There are instances on record where those who wanted low ceilings were prevented—for their own good, apparently—by the local by-laws. Some at least of our political housing ideals seem to be based upon similar principles, and may easily be burdens in the future.

It is to the simple fact that we have built so solidly in bricks and mortar that we inherit our slums. During their long life-time, cities have grown bigger, and civilisation has changed. Slums they may have been—according to our present ideas—from birth, while there is also the old adage about the sty and the pig. Nevertheless, it is our feeling that a less permanent form of building would, without doubt, have shown a transitional development in the treatment of slum areas. It is the permanency of the structure that is responsible for the wide gap between the slum and our present ideals on housing. An analogy borrowed from any of our everyday accessories would seem to confirm this theory. If this fundamental fact has any significance, it explains the extreme views that are held upon the subject. From the nature of the problem it is perhaps natural that the views should be extreme, but we have not found out everything all at once. Herein lies the danger. With the knowledge that houses have lasted longer than our ideas, we are in danger of doing the same thing again. Our present ideas on housing are better than those of an earlier generation, but it is fairly certain they will not last as long as the houses. This is not a philosophy that is completely negative; it is merely a warning that there is no sovereign remedy for all time. Already there is evidence that the solution may become stereotyped, and our ideas canalised, whereas permanency inherent in building should be neutralised by mobility of attack.

It seems to us that the activities of the London County Council point very clearly to the difficulties in grappling with a problem of the nature we have outlined. In view of the serious deficiency in houses, the main efforts of the Council have naturally been concentrated upon means for providing an adequate number of NEW houses. This is one side of the problem. The no less important task of clearing unhealthy areas has received concurrent attention. These two main lines of operation are directed in two totally different directions, but they have one object in common—better housing. While others are advocating theories for repopulating our rural districts, London is endeavouring to do its best with the conditions as it finds them in an imperfect world. The Council is tackling successfully a dual problem—both spreading the population thin on the land, and housing it decently where it prefers to be thick. The groups of housing estates are on the lines laid down by the manual issued by the Local Government Board. They are in accordance with the latest theories on housing and on density of development. They represent the extreme reaction from the hundred-year old slums. They are in essence very pleasant garden suburbs, from which, presumably, the workers travel daily to their work. As a housing solution, it seems to us to depend either upon cheap and quick travelling facilities, or upon moving industry from the city into the suburbs.

In contrast with this method, the new buildings in the schemes for the reconstruction of unhealthy areas usually take the form of flats and maisonettes contained in blocks of four or five stories. Apparently in the area occupied by old and unhealthy dwellings it is possible to provide new housing accommodation for approximately as many persons as those displaced by the clearance, and at the same time to leave ample space about the building for light and air as well as for courtyards. In other words, a less objectionable way has been found of crowding in a small area. The housing idealist will note the official opinion that there is amongst those who live in the reconstructed areas an increasing number who have a preference for flats or maisonettes, chiefly, perhaps, because of the ease with which they can be managed. To our thinking, these new blocks appear to be a very satisfactory solution of a difficult problem. The solution may not appeal to those who desire to see everyone in self-contained houses in the suburbs, but it is at least a practical solution to a pressing problem that cannot be set aside until London has ceased to exist as a city, and industry is distributed evenly over the countryside.

By its progressive policy, and by the adoption of more than one solution, the London County Council gives us the example of the mobile attack, and the proof that the housing standards of to-day will not necessarily be those of to-morrow.

*"Housing." Published by the London County Council.

NOTES

Cross River Traffic. According to the *Times* Parliamentary correspondent, the Prime Minister has now had in his possession for three weeks the report of the engineers who have been considering the proposal to build a new double-decked bridge at Charing Cross, and it is expected that in the very near future a definite statement of the decision of the Government will be made. We are glad to learn that it is now considered to be highly probable that an entirely different scheme from that suggested by the Royal Commission on Cross River Traffic in London, over which Lord Lee of Fareham presided, will be recommended for the consideration of the authorities concerned. "If this course is adopted, the new scheme will provide for :—

"The removal of Charing Cross Station from its present position on the north side of the Thames.

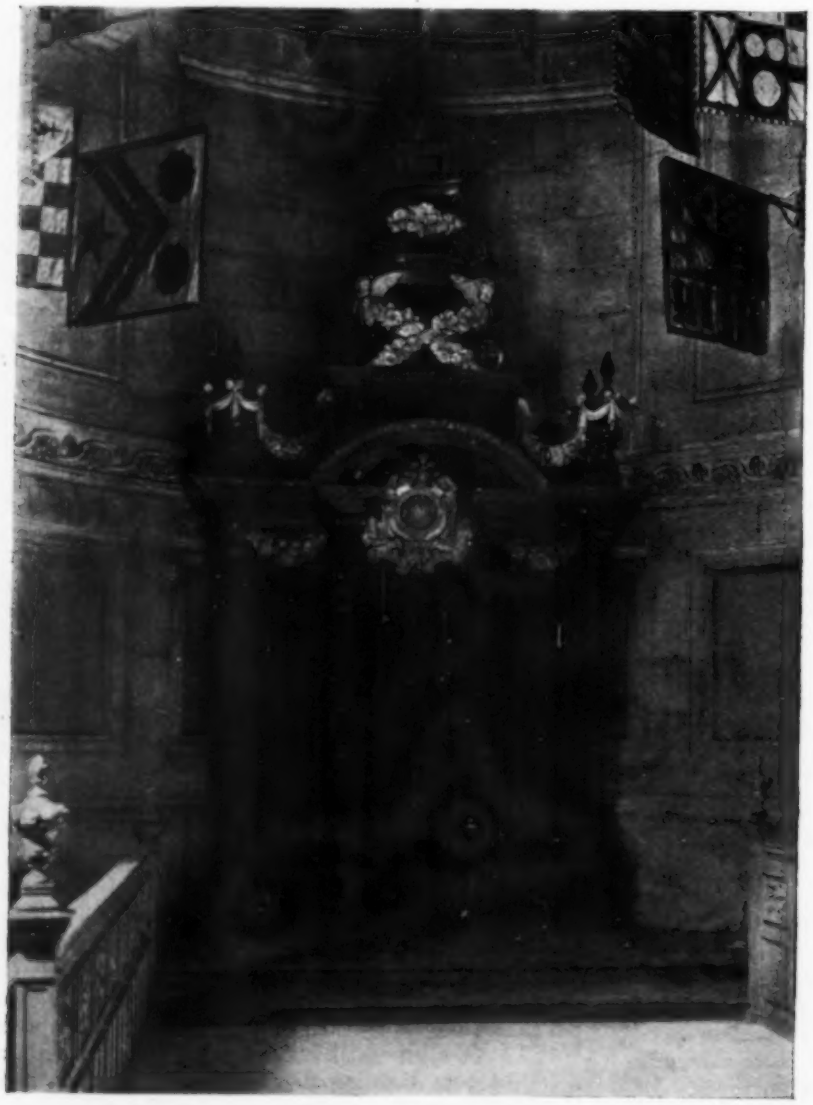
"The extension of Waterloo Station to cope with the traffic which now uses Charing Cross Station.

"The construction ofa road bridge from a point near the Nurse Cavell Statue to Waterloo road.

"The demolition of Hungerford Bridge and the Charing Cross railway bridge.

"The retention of Waterloo Bridge, widened to permit of four lines of traffic."

The New Proposals. With one reservation we heartily welcome these proposals if they are to be made, as they go a long way to meet the views of those who are concerned not only in the preservation of Waterloo Bridge, but in the right treatment at Charing Cross. With the exception of the proposal to construct a road bridge from a point near the Nurse Cavell statue to Waterloo road, these suggestions very closely follow proposals which have been repeatedly put forward in our columns, and we can only hope they will, with the exception referred to, be accepted by the Government. When the report of the engineers is published we shall, of course, be in a better position to understand the proposal for the construction of the road bridge ; at present we can only express the hope that a high-level bridge will not be acceptable to Parliament and the public.

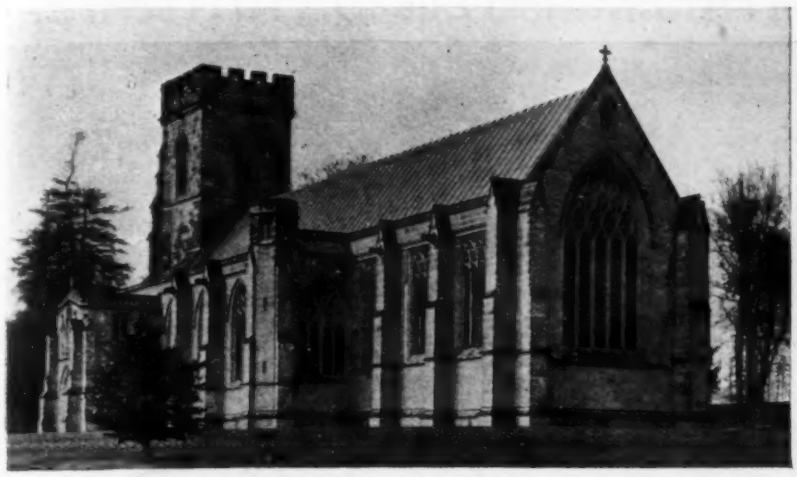


The Sovereign's Throne, Chapel of St. Michael and St. George, St. Paul's Cathedral.
Mr. Mervyn E. Macartney, F.R.I.B.A., Surveyor to the Cathedral ; Mr. Henry Poole, A.R.A., Sculptor.

A Low-Level Bridge. We infer from a leading article in the *Times* on the proposals that our contemporary envisages a low level road bridge. "According to the estimates prepared by Sir Henry Maybury and others," we read "the cost of the suggested road bridge at Charing Cross and of the demolition of buildings, together with the sums paid in compensation, would be approximately £5,000,000, and that of the whole of the contemplated scheme, including the works on both sides of the river and the underpinning and widening of Waterloo Bridge, about £10,000,000, which would represent a saving of from a million to a million and a half on the revised estimate for the Lee scheme. If their accuracy is established these figures undoubtedly in themselves constitute a strong argument for the alternative proposals, which are further recommended by the fact that they, too, like the scheme of the Commission, provide for the retention of Waterloo Bridge and for the disappearance of the unsightly bridge which now spans the river at Charing Cross. There is undoubtedly also something attractive in the conception of a glorified Waterloo Station, and of the construction of a low-level road bridge of beautiful and dignified proportions across the river."

Signing Buildings. The question was raised a few days since as to how far an architect may legitimately advertise the fact of his authorship of a building. We hold that an architect has as much right to have his name carved or painted in a permanent way on any building he has designed as a painter to sign his picture ; as a matter of fact we might argue that the signature is a duty in either case. It is said that architects are almost as modest and inarticulate as burglars ; they certainly do not get the full publicity they deserve. Of course, the signature on a building should be optional, so that in the cases suggested by Mr. C. F. A. Voysey, where the architect had really not done the actual designing and planning himself, he need not intrude on the rights of clerks or ghosts. We may add that it is quite correct professional form, according to the rules of the R.I.B.A., for architects to sign their buildings.

The Henry Hudson Memorial Window. We illustrate on page 722 the first of three stained-glass windows commemorating Henry Hudson, the navigator and discoverer of Hudson Bay, which Mr. Leonard Walker, R.I., has been commissioned to design and carry out for the Church of St. Ethelburga, Bishopsgate, E.C. This first window was appropriately unveiled last week by the Governor of the Hudson's Bay Company, whose great new offices adjoin St. Ethelburga's Church. The window is a fine example of modern stained-glass work, showing Hudson standing on a quay examining one of his sailing orders, with



Sledmere Church.
The late Temple Moore, Architect.

his famous ship, *The Half Moon*, in the background. Mr. Walker was enabled to show the ship accurately in every way from a model which exists in the Amsterdam Museum. Henry Hudson is particularly associated with St. Ethelburga's, as it was here that, on April 19, 1607, he and his crew made their Communion before starting on their great voyage. The second window will show Hudson up the Hudson River and meeting the Red Indians, while the third will show the navigator's tragic end, Hudson being cast adrift by mutineers in a boat among the ice and left to perish. Mr. Walker is to be congratulated on an admirable piece of work. The window is lit by borrowed light, but the quality of the glass work is nevertheless perfectly revealed. In this work the artist has effectively demonstrated his theory that stained-glass should speak for itself, free from unnecessary surface paint, which mars its beauty. The window is an example of pure glass work controlled by a sensitive appreciation of good design and rhythm.

Street Accidents.

The recent return of the number of persons killed and injured in Great Britain last year in street accidents seems to call for serious attention. According to this return, 5,329 persons were killed and 148,575 injured. In *The Builder* for April, 1906, we referred to a return in England and Wales made by the Home Secretary as to fatal accidents due to mechanically-propelled vehicles, and the number was 141 for 1903. A dangerous epidemic would hardly cause more deaths and injuries to health than does a walk in the streets in present times, but if we turn our roads into railway tracks, dispensing with all safeguards attending railways—even the platforms—it is hardly to be wondered that loss of life and injury to limb must ensue. The railway companies have recently made this point when comparing their liabilities to those of the motor omnibus proprietors, comparing the roads to railway lines without the signalmen; a duty imposed on the police in the case of the roads.

The Architecture Club Dinner.

The dinner given to the Architecture Club at Olympia on Thursday, the 19th, by Mr. H. Greville Montgomery was a very pleasant affair, and the two hundred guests who assembled before seven spent four or five hours in a very agreeable way—during an excellent dinner, a programme of delightful music, a short visit to the exhibition galleries and a couple of hours dancing. It was altogether an admirably managed entertainment and gave great pleasure to the guests.

Skyscrapers and Tube Railways.

Two very interesting lectures were delivered in London last week—and are reported in other columns—on subjects which, though seemingly diverse, have a common interest—that of reducing the flow of traffic at street level. Mr. Alfred Bossom, F.R.I.B.A., talking on "American Architecture," described how the desire for advertisement, the inspiration that success affords and a longing for perpetuation have resulted in vertical rather than horizontal building expansion—an expansion made possible by the verticality of the sun's rays and—in the case of New York—the city's rock foundation. These "skyscrapers" play a large part in reducing street traffic, as each building is in itself a small town of two or three thousand persons. London is forced to expand laterally and the lecture on "Some Features of Underground London" which Mr. Harley Dalrymple-Hay delivered to the London Society showed the amazing manner in which London's subterranean roads, or tube railways, are constructed and so carry the large day-time population of the City and West End from and to the suburbs.

First National Bank, Jersey City, New Jersey.
Mr. Alfred C. Bossom, F.R.I.B.A., Architect. (*See page* 739.)

GENERAL NEWS

Liverpool Hospital for Women.

Messrs. Edmund Kirby & Sons, F.R.I.B.A., are the architects for the new Liverpool Hospital for Women which is to be erected on the corner of Bedford-street and Falkner-street, Liverpool, and is to cost £120,000.

R.I.B.A. Statutory Examinations.

The R.I.B.A. Statutory Examinations for the Office of District Surveyor under the London Building Acts, or Building Surveyor under Local Authorities, will be held at the R.I.B.A., London, on October 17, 18 and 19, 1928. The closing dates for receiving applications for admission to the examinations, accompanied by the fee of £3 3s., is October 1, 1928. Full particulars of the examinations and application forms can be obtained from the Secretary, R.I.B.A.

Obituary.

At Monday evening's meeting of the R.I.B.A., the Hon. Secretary announced with deep regret the death of the following members:—William Hart Pertwee, transferred to Fellowship 1925; John Bertram Wills, R.W.A., elected Associate 1909, Fellow 1921; George Dale Oliver, elected Associate 1877, Fellow 1892, and transferred to the list of Retired Fellows in 1921; Malcolm Sinclair McCallum, elected Associate 1921; Alfred Hill (of Croydon), elected Associate 1880; William Thomas Hanman, elected Licentiate 1911.

The Tower of London.

The official lectures at the Tower of London recommenced on Tuesday last, when the Earl of Meath occupied the chair for Mr. Allen Walker's lantern lecture on "The Tower as a Fortress and Palace." These lectures were inaugurated as an experiment last year by H.M. Office of Works, with the concurrence of the Constable of the Tower (Lord Methuen). The lectures have already drawn considerable audiences, and are to continue on Tuesdays and Fridays, at 11 a.m., until the middle of August. Admission tickets (1s. 6d. each, including admission to the towers to be visited) may be obtained in advance by personal application at the Tower, or at H.M. Office of Works, Storey's-gate, Westminster; or by sending a remittance to the latter address. Owing to the restricted accommodation, only a limited number of tickets will be available for each lecture. Those not sold in advance can be obtained at the Ticket Office at the Tower of London on the morning of the lecture.

The Preservation of Stonehenge.

The 36th annual dinner of the Society of Wiltshiremen in London was held on Saturday night at the Connaught Rooms. Lord Lansdowne presided. Proposing the toast of "Wiltshire, Our County, and Wiltshiremen in London," Lord Lansdowne said that he believed he was right in saying that there were more historic remains in Wiltshire than in any other county in England. Stonehenge was like a beautiful picture, but it required a frame. It had been in danger of complete destruction by the erection of unsightly buildings in the immediate vicinity. But the ground round it had now been purchased. There were three pieces of ground concerned, and two of them had been purchased already, and delivered almost entirely, he believed, with the help of Wiltshire subscriptions. But the third and largest piece of ground remained to be paid for, and that was the reason of the national appeal. It was a subject they should all take to heart and do their best to further.

Lord Ailesbury, president of the society, who replied, mentioned that the council of the society had decided, since the chairman's speech, to vote 10 guineas to the Stonehenge Fund.

Stained Glass Window in Memory of Henry Hudson, the Explorer, St. Ethelburga's Church, Bishopsgate. (*See page* 720.)

By Mr. Leonard Walker, R.I.

ROYAL INSTITUTE OF BRITISH ARCHITECTS

THE WORK OF TEMPLE MOORE.

At the meeting of the R.I.B.A. held on Monday evening last (Mr. H. V. Lanchester, V.P.R.I.B.A., in the chair), Mr. H. S. Goodhart-Rendel, F.R.I.B.A, read a paper on this subject, which was illustrated with many interesting lantern slides. Having acknowledged Mr. Leslie T. Moore's co-operation in lending a series of drawings and photographs of Temple Moore's work, exhibited on the walls of the lecture room, the lecturer, opening his paper, said that popular criticism seemed to have decided that the last hundred years had been a bad time for architecture. Buildings dating from those years could not escape from one or other of two condemnations; if they resembled older buildings they were "mere reproductions"; if they did not they were "incorrect." Nor did the trouble end there. "Mere reproductions" were denied even a borrowed beauty—they "lost the spirit of the original." "Incorrect" buildings were declared to be even worse, their designers having presumed ridiculously in varying the sacred form of the past. Occasionally, forgetting its severity toward presumption, popular criticism demanded of architecture a "new style"—a style unlike any other style that had been. Respectable professional gentlemen could then be seen conjuring rabbits out of their top-hats, only to be told that the rabbits lacked real originality and looked rather ill-bred.

If this kind of criticism were just, the practice of those to-day who looked to new materials to produce the novelty they could not themselves create would be the only reasonable thing for any architect to do. If, for a century past, all buildings that had not been mere copies had been merely bad copies, let us by all means fly to the architecture of ferro-concrete, in which little that could be copied had yet come into existence. Let us make everything of this seductive material, from the walls and ceilings down to the kitchen-dresser, and see whether new charms could not be secured in this way. If the critics sneered at our mouldings, let us give them no mouldings at all; if they found our construction old-fashioned, let us mould our buildings in one piece.

The great architect whose art was the subject of that lecture never seemed to have been troubled by criticism that could lead to such conclusions as those. His buildings most certainly often had been called "mere reproductions" by the many to whom every Gothic arch was like every other. There also must have been critics perceptive enough of the peculiarities of his designs to pronounce them "incorrect." He never attempted to meet the demands for a new style, regarding the making of new styles as less his business than the making of new beauties. He used new methods of construction only when he considered them superior to the old ones. Where the merits of a new and of an old method seemed equal, he would choose the old one as the better consonant with the conservative genius of English architecture.

In those works of Temple Moore that adhered most closely to the forms of the mediæval styles, no critics could be so unintelligent as to maintain that the "spirit of the original" had been lost. In most of them it was apparent to anyone with a knowledge of the Middle Ages that the spirit had been retained and transmuted into modern terms. A critic, however, need not be unintelligent to object that the adherence to mediæval forms was often closer than was necessary, or even, from our present point of view, desirable. It could not be proved that any beauty had been lost by it, but it equally could not be proved that by it anything had been gained—and in the anti-Gothic reaction that we were now living through, the slightly archæological flavour of some of Moore's churches was unwelcome to many people.

Yet it was very foolish to miss—because of the superficial distaste—the experience and pleasure that a great work of art could give; and most of Moore's churches could claim to be great works of art. Style was the least important of all the unimportant elements of architecture, and generally had less relation with the merits of a building than the cut of a man's clothes with the condition of his soul. To object unconditionally to a style was unworthy of national criticism—no style that was a style at all was incapable of being a fit vehicle for the expression of a noble idea.

It might be—it probably was—true that for us to-day a simplicity approaching stylelessness was the direction in which our finest and sincerest art naturally proceeded. The riches and the enthusiasm of the last century were spent, and their place was taken by a pretension and false sentiment against which all true artists were in revolt. Ornament that was formerly a wonder of human patience was now more than ever the ceaseless vomit of machines, so that the word "ornamental" was almost become a reproach. Such buildings as Moore's church at Sledmere, though perfectly appropriate to the days and circumstances in which they were built, were not of the kind that our present mood helped us to appreciate. Others of Moore's churches, such as the noble St. Columb's, at Middlesbrough, built many years ago, seemed to have anticipated preferences in an astonishing way. If we loved St. Columb's church we loved an essential part of Moore's mind: but if we did not also love the Sledmere church, we had missed a great deal else that his mind could give. The whole body of his work was singularly harmonious and consistent, and could only be properly valued by those who took a little trouble to understand that part of it which might be hastily passed over as less attractive than the rest.

Moore's master in his art was George Gilbert Scott, son of the architect of the St. Pancras Hotel, and father of the architect of Liverpool Cathedral. Gilbert Scott, junr., as he used to be called, was a man of exceptional ability, whose too short career had not yet been properly chronicled. To him more than to any other church architect was due the break-up of the Victorian Gothic convention that his father had had so large a share in establishing. His works were few, but each of them had great influence with his contemporaries. The first of them to be illustrated in the architectural Press—the church of St. Agnes, at Kennington Park—caused a storm of protest among the less imaginative of his confreres, and was only not strange to us because its once novel excellences had since been freely imitated. When it was built, few if any churches, save those of Bodley, were being built in England of English style. The styles of France and Italy, Anglicised, perhaps, but unmistakable, provided the dominant flavour in the Gothic stew-pot of the Victorians when Street was head-cook and the return to English fare recommended by Bodley, Gilbert Scott, junr., and Micklethwaite and Somers-Clarke necessitated a great rising of vessels.

Nevertheless, the regime of these men prevailed, and by the time Temple Moore took over his master's practice Street's selectism was discredited, and the traditions of English Gothic were everywhere re-established. In all the designs of Moore there was no hint of inspiration from other countries, no more evidence that he had ever left these islands than in the work of the Yorkshire Abbey builders that he loved so well. Probably there was no building, old or new, that was more exclusively and characterisically English than St. Wilfrid's Church, at Harrogate, and there certainly was no other building that was so characteristically Moore's. Neither Bodley nor Micklethwaite and Somers-Clarke made any mature re-use of the English style of the thirteenth century, but chose rather to clothe their creations in the garments of the late fourteenth; Moore, indeed, would have been alone among the great church-builders of his generation in his choice of style at St. Wilfrid's if his master, Gilbert Scott, had not tried the same experiment some years earlier at St. John Baptist, Norwich. There were some similarities of character in the two churches, but many more qualities of difference. Moore spoke Gothic with a strong Yorkshire accent, wherever he found himself, and St. Wilfrid's was, in consequence, unlike any building by other architects in other countries.

In order that an important issue might be discussed, it was convenient to turn from that Yorkshire church in Yorkshire to a Yorkshire church in Tooting. In that ridiculously named suburb Moore built the church of All Saints, which for Londoners was the only important piece of his work that was easily accessible. The issue raised was, of course: should a Yorkshire church be built in Tooting? A sufficient answer could probably be furnished by another question. What was a Tooting church? Tooting was in Surrey, but the genius of the place had long since annihilated any trace of county tradition there, without making any tradition in its stead. It was therefore open to any architect to build there in the way that he found most comfortable, provided always that his freedom did not extend beyond the matters of tradition into matters where freedom was prohibited by common sense. To have built All Saint's Church of moorstone would obviously have been ridiculous: it was very properly built of yellow stock bricks. Perhaps, too, the suggestion of Yorkshire in its appearance and that of its parsonage house was associative rather than inherent: such forms might have developed as reasonably in Surrey as in Yorkshire. To most of us, any scruples on the subject would probably seem ridiculous—certainly they would have done so to the mediæval mason who built always in the way he had learnt to build, wherever it

Sledmere Church: The Chancel Screen.
The late Temple Moore, Architect.

might be, and stayed within his county style only because he stayed within his county.

Nothing was certain in the future development of English architecture—except perhaps that the architects of each generation would continue, as always, to think disparagir of the work of the generation immediately preceding their own. Nothing was certain; but it was extremely likely that there would soon be neither a public to demand nor architects capable of supplying churches like the churches of Temple Moore. In the heydey of Bodley and Micklethwaite it must have seemed that the Church of England had found once for all an architecture proper to herself, an architecture as little liable to alteration as her Prayer-Book. Whatever change there might be would surely be gradual and orderly, as it had been in the centuries before the Reformation.

Activity, in itself, continued the lecturer, was not a bad thing, and if the next Prayer-Book, or the next but one, was to be used in churches built on the model of the at Le Raincy, perhaps deepened and enriched by motifs from Sweden and Denmark, we need not necessarily despond. Ferro-concrete had its appropriate beauties no less than stone or brick. The architectural language of Temple Moore was the langauge of the unreformed Church of England—its use was an assertion of the contrivance of that Church, though reformed and altered, against the counter assertion that our national religion was founded by Henry VIII. That, after all, was the significance of what was called the Gothic Revival. Nowadays Henry VIII. was thought of more as a husband than as an Early Father. Whether our new church architecture was to be rampantly Modernist, or compiled, like the proposed book, of elegant extracts from many ages and many climes, remained to be seen. It would, for a time, be an architecture of disorder, stimulating no doubt, but improbably productive of buildings noble and secure like those that they had been reviewing. Times changed and we with them.

Discussion.

Sir Giles Gilbert Scott, proposing a vote of thanks, said he did not come very intimately in touch with Temple Moore whilst in his office, as Moore worked at his private house at Hampstead, while he (the speaker) worked at the office in Staple Inn. Temple Moore was an extraordinarily quiet and retiring man, and lived almost a hermit's life at Hampstead, wrapped up in his work. He had an extraordinary passion for work, and could draw with both hands with equal dexterity—a useful accomplishment when doing a freehand drawing of a pointed arch. Commenting on the great strength and simplicity of Temple Moore's churches, and the thickness of their walls, the speaker said it would be interesting to see what Moore would do to-day when thin walls were the rule, and it was difficult to get a massive effect owing to the lack of funds. In the speaker's opinion, Temple Moore's work was the finest done during the Gothic Revival.

Mr. Sidney D. Kitson, seconding the motion, commented on the lure of Yorkshire Gothic during the last hundred years. Turner, Girtin, Cotman, all went to Yorkshire and felt the extraordinary attraction of Gothic work. Moore was enormously influenced by it, and developed Gothic on entirely rational and structural lines. His work was so simple that it seemed inevitable, and that was the hall-mark of genius.

Mr. William Lucas having spoken,

Professor Bereeford Pite said Moore summed up and completed the Gothic Revival. Instead of making a new world of Gothic, following Street and Butterfield, he returned to the Middle Ages, and looking at Moore's work one could not get away from the glamour of that period. There was an originality about his plans which always justified itself. Commenting upon the architect's works, the speaker mentioned especially St. James's Church, Clacton, which, he said, had all the dignity and power of an abbey interior. Temple Moore was a great master of the Gothic Revival, to whom there did not appear to be any real successor.

Mr. H. P. Burke Downing having paid a tribute to the work of Temple Moore,

Sir Charles Nicholson said, in looking at Temple Moore's plans one was struck by the "slickness" with which he tackled a problem. There was an extraordinary sketchiness about his drawings. They looked as if they had been made in half an hour, and yet one could plainly read his intentions, so intelligibly were they "shorthanded."

Mr. H. M. Fletcher said he felt that the reason the work of the Gothic Revival was rather looked down upon nowadays was because it had just reached the point of looking shabby. It required 100 or 150 years to get that time-worn look which so appealed to English sentiment.

Mr. Leslie T. Moore said Temple Moore worked very hard, and it was amusing to see him drawing with both hands with his rubber in his mouth. He never wrote a letter himself because no one would have been able to read it. He had very few books, but greatly valued Viollet le Duc's "Dictionary of Architecture." Proportion and construction seemed to come to him naturally.

Mr. A. S. G. Butler commented upon the fertility of Temple Moore in overcoming difficulties in "tricky" parts of a building. One never failed to find inspiration from his works.

Mr. F. L. Jackman said he thought hardly enough had been said about Temple Moore's restorations, of which many examples could be found in Lincolnshire.

Mr. H. C. Corlette referred to Temple Moore's stock brick church at Peterborough, and said he remembered being impressed at Albi with the fine effect of plain brick in a cathedral church. Mr. Goodhart-Rendel, from a comment he had made on one of the slides, seemed to think that a church was not sufficiently roofed unless it was vaulted. He (the speaker) felt that a wooden roof could be quite sufficient, and one only had to remember the wonderful wooden roofs of Norfolk to be convinced of that.

The Chairman, putting the vote of thanks to the meeting, said a point had been made of the thickness of Temple Moore's walls. They certainly looked thick, but it appeared to him that they were actually a good deal less thick than they might have been to get the same vigour and strength of effect.

The motion was then put to the meeting, carried with acclamation, and Mr. Goodhart-Rendel briefly replied.

"THE BUILDER" DEBATE

V.—EXAMINERS FROM THE EXAMINED.

"That the R.I.B.A. Board of Examiners should be composed entirely of men who have themselves passed the R.I.B.A. Examinations."

Sir,—A very thoughtful and logically constructed letter from a correspondent signing himself "Architect," in one of your recent issues, has suggested a profitable subject of debate, and believing that, in spite of the able way in which he has presented his case, there is still much that may be added to the principles for which he stands, I have ventured to table the above motion.

To members of the Institute it is not so much a matter of private opinion as of consistent policy that the way in which its ranks are recruited should be definitely governed by wise ordinance. In whatever way this is regulated there will certainly be exceptional instances which may make the wisely conceived regulation appear absurd; but it is bad statesmanship to permit the exception to mar the rule.

For many years the Institute has associated itself with a policy of registration, to which it, and all of us members with a vote, are now definitely committed. The aim of the policy is to ensure that all who profess skill in architecture shall have passed through an adequate period of sound training, and proved themselves responsive to the training. The proof which the authors of the policy have had in mind is obviously certain standard examinations, not necessarily exactly on the lines of the present R.I.B.A. examinations, but certainly examinations, and certainly standard examinations.

The policy stands for an ideal which cannot be attained within our times, and the fact has had to be recognised by all who believe in practical politics. To such as these it has been patent for many years that not only would it be hopeless to promote a measure that excluded from the practice of architecture all who had not passed the R.I.B.A. examinations, but that such an uncompromising attitude would mean the loss of a number of able men, presuming that the impossible were achieved, and a measure on these lines passed into law.

The Institute, several years before the War, therefore resolved to strengthen their personnel by recruiting a new temporary class, to be called Licentiates, and composed of men whose work in practice was evidence of sufficient ability. In quite recent history has come the fortunate absorption of the Society of Architects, and a further addition to the ranks of the Licentiates, while a still more recent and diligent search for talent remaining outside the Institute has added other numbers to the same class.

But in all such cases it has been repeatedly asserted by prominent men of the Institute that the Licentiates are a temporary class that will automatically disappear by promotion to the Fellowship class or by death, and that the Institute will eventually be recruited entirely by examination.

This is a most desirable state at which to aim, and it will doubtless arrive all the more quickly as the policy is maintained consistently. It is surely the last word in inconsistency to profess a belief in an Institute composed of examined men while permitting the board of examiners to be qualified in any other way than by examination! Such a breach of logic could only be justified were it a fact that the ranks of members qualified by examination were so thin that there were not sufficient to compose the board, or that their abilities were so poor that they were unfitted to be examiners. If this were indeed the case, it would merely serve to show the futility of examinations.

The fact that those members of the board who have not qualified by examination are able men and well qualified to examine does not affect the principle one atom, any more than the fact that we all know numbers of men who have qualified by examination and are yet obviously unfitted to examine proves that the board should be entirely recruited from the un-examined class.

There is still another point which deserves consideration. Those who have passed through the mill know full well the intense nervous strain imposed by the sitting for an important examination. They know what a poor show an able man is liable to make when nerves give way at the critical point. They know what a semblance of *savoir faire* can be assumed by the well-crammed examinee. Surely they have the right to feel that the men who are examining them have themselves experienced all these things!

From whatever angle the subject is viewed, it seems obvious that this breach of consistent policy has arrived as a result of careless decision and lack of deliberation on the part of the powers that be. The reflection is, to say the least, disturbing; for one has the right to look for the highest wisdom in the highest places.

Positive.

THE REPAIR OF ANCIENT BUILDINGS—XVII

By A. R. POWIS, A.R.I.B.A.

THE USE OF IRON AND STEEL IN REPAIR OF TIMBER-FRAMED CONSTRUCTIONS.

Iron and steel, though useful sometimes, should be avoided in the repair of ancient timber framed constructions, where new oak will serve the purpose. There are occasions where either of these metals are desirable. (1) Where very much more of the old work can be preserved by their use without unsightliness than can otherwise be done. (2) Where the size of the timbers to be repaired makes the cost of using oak prohibitive.

Both these conditions were present in the case of the roof of Westminster Hall, lately repaired and strengthened with steel by H.M.O.W. under the advice of Sir Frank Baines. This work was very well done; I do not see that any other means could have been adopted. We may regret to know that so fine a roof no longer completely has its original constructional significance. In this work it cannot be said that the roof is hung from an almost hidden steel frame, for without the oak work I doubt if the steelwork would stand. Metal was used to strengthen, not to replace the structural members of the old roof. Possibly an apt simile would be to liken the present state of this, the finest piece of carpentry ever done by man, to a living lion caged for show, as opposed to the beast roaming freely the foothills of Kenya Mountain.

Steel and iron, then, have their uses in the repair of timber. Either are necessary as bolts where a beam is scarfed; rods are sometimes desirable to tie together the feet of spreading principal rafters. It can hardly then be questioned that these materials occasionally should be used elsewhere, and this in spite of the knowledge that hidden ironwork cannot receive the attention it needs for its preservation. It is known that the great hidden steel stanchions of American skyscrapers have been found to have rusted through in less than twenty years; but while such cases are exceptional, they should be remembered, and in monumental buildings metal should only be used sparingly and with caution, and with as great a margin of safety as was provided in their timber by the mediæval builders.

Some architects prefer to strengthen tie-beams and other of the greater structural timbers with iron flitch plates than to scarf new ends on to them, and this practice may be recommended where by its adoption more of the old timbers is preserved than would otherwise be. It may be that before long structural ironwork will be prepared on a commercial basis that will no more rust than do stainless knives in use every day. Mr. Wm. Weir has, however, told me that he has never come across a case in his practice where it has been desirable to use flitch plates. Enough has been written here to suggest ways of repairing other timber work than roofs. Floors, framed walls, galleries, and such structures may all be treated on lines not dissimilar.

West Walton Church.

The two accompanying illustrations of the roof repair of West Walton Church will be the better understood for some description. In the photograph taken from outside the church, it will be seen that part of the roof is repaired and the newly-recast lead is being laid there. It may be noted that the horizontal joints are staggered and, I think, the sheets of lead are being laid a little askew with the eaves. One bay is undergoing repair, and the protective tarpaulins are rolled back for the work. In this portion of the roof a new wall plate can be seen, and the tail of a new end of one of the hammer-beams. Beyond—farther west—the old roof, though uncovered, has not been disturbed. It will be seen that the wall-plate had quite disappeared, and many rafter feet with it. Farther west, still in the untouched roof, the oak "cladding," laid with joints of about 1 in., may be seen projecting below the untouched lead.

In the photograph taken from within the church, a portion of the repaired work may be seen. A new rafter, with the circular-saw marks, may be seen in the centre of the roof bay that is shown. There was about one of these to each bay, and the other rafters were otherwise completed by scarfing together the remaining sound timbers. Only a very small portion of the new end to the hammer-beam can be seen in the photograph. More was to be seen in other of the beams, where rot was worse. The raw deal boarding is visible between the old oak "cladding," where before the repair the underside of the lead sheets were visible. It will be seen from the spacing of the bays that the roof may not have been designed for this church, and further evidence of this is to be noticed in the church, for in some places the embattled cornice-board, the straining-piece between the hammer-beams, is a number of inches away from the wall. Traces of colour decoration may be seen in the window arch.

Rot and Its Prevention.

No suggestion for the repair of timber structures should be left without reference to ways by which the active agencies of decay—wood-worm, dry rot, and rot due to alternate periods of wet and dry—may be checked.

Since the repair of the magnificent roof of Westminster Hall the damage done by the larvæ of the death-watch beetle—Xestobium tessellatum—and of the lesser death-watch beetle, in old days known respectively as wood-worm and furniture worm, has received scientific study and excited public attention. To-day the guardians of ancient roofs can be frightened into making drastic and expensive renewals by the very mention of this insect, something in the same way as men and women were persuaded to offer themselves as material for the surgeon's skill when appendicitis was newly a subject for paragraphs in every newspaper. The disease is serious. But the discovery of worm-holes in timber is not of itself warning of instant collapse. There is hardly any old timber construction that is not affected. The mark of the insect can be seen on the dead knots and limbs of every growing tree, and on many gate-posts that have stood in the open for more than fifteen or twenty years. From ages before man first built shelters for his kind, the beetle no less than moth or rust has caused slow corruption. Man can hinder, but he cannot prevent ultimate decay.

In spite of the fact that this maggot gets sustenance from dead wood in the open air, evidence seems to show that it thrives best in dim and confined spaces. It appears that he is most active where the dirt of neglect lies undisturbed for years. Therefore it is thought that the two most effectual checks to his activity are cleanliness and ventilation. Roofs should be swept clean at regular intervals, especially those parts most difficult of access—the timbers at wall tops and above ceilings. A vacuum cleaner should be used wherever it is available, for with it this cleaning can be done more thoroughly.

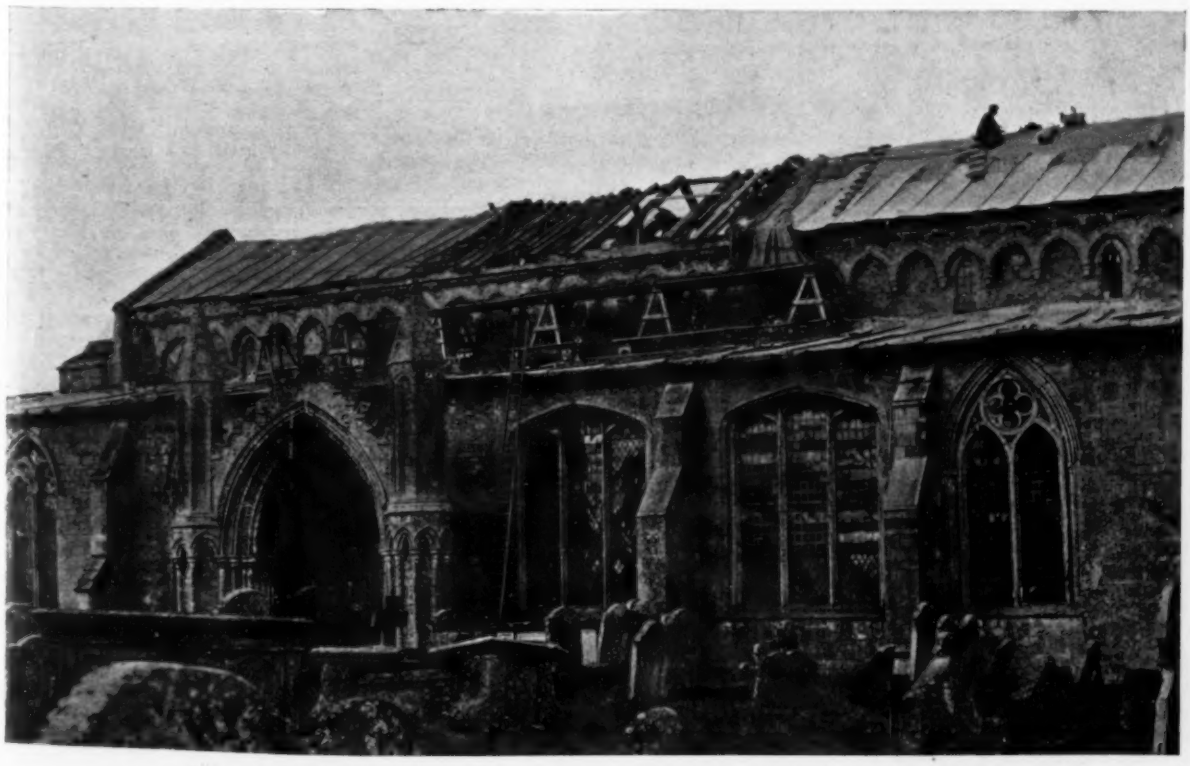


Fig. 25.—West Walton Church from the south, during repair, 1907.

Fig. 26.—West Walton Church Nave Roof after repairs, 1907.

The indifference of our ancestors to draughts allowed them to suffer the wind to blow through roofs with little hindrance, but the modern insistence on greater comfort has brought with it the practice of warming ancient buildings to a degree unknown in old days. Now that felt is often laid below tiles and lead alike, and all holes and cracks through which the outer air penetrated are stopped, the heating engineer when he makes his tests can report a wonderful rise in the temperature within a building. The stuffy heat that is felt in high roofs seems to provide the beetle with exactly that atmosphere in which he most quickly multiplies. With modern changes, the old balance of life is disturbed, and at each advance a new adjustment has to be made. Thus where increased comfort is certainly followed by the hastened corruption of noble timbering, it is necessary with the provision of the first to resist by new means the more rapid progress of the second.

With this object the scientists of to-day have experimented, and as a result of investigation, invented solutions which materially check, if they do not ultimately prevent, the breeding of this insect. Professor Lefroy, in his enthusiastic efforts to this end, sacrificed his life during the search for more certain preventives. Yet before he died he gave the world a greatly increased knowledge of the subject. Sir Frank Baines, with the help of the manufacturer, devised a liquid useful to check the ravages of this pest. Both preparations are good; either should be used freely whenever a timber construction is under repair. Each beam, each joint should be treated, and the printed instructions which approved makers send out with their preparations should carefully be followed. It is, however, advisable before ordering the application of a liquid throughout a structure, to treat a portion only, so that it may be certain that no undue change of colour follows the operation. Many people, particularly the amateur lovers of ancient buildings, like to use preservation liquids that darken oak. This is a mistake. The natural colour of oak is beautiful, and when it has aged it becomes more so. Any new timber can be stained dark, but the tone acquired by age is a thing difficult to get, and one which it is a shame artificially to alter. The authorities of South Kensington Museum have found it useful to treat fine joinery and furniture with a preparation made by dissolving a quarter of a pound of parchment cuttings in a quarter of a gallon of boiling water. This liquid is applied with a brush or spray allowing it to sink well into the wood. Any of this parchment size which remains on the surface should be sponged off after the application has been made, and finally a little beeswax and turpentine can be applied. Again, for furniture and fine joinery bi-chloride of mercury is sometimes injected into the worm-holes with a hypodermic syringe, but as this liquid is dangerous to those who use it, special precautions must necessarily be taken.

It may be observed that furniture that is constantly dusted back and front and moved about is not subject to the attack of either beetle, and from this it may be concluded that such regular cleaning will ensure safety. Therefore where it is possible to arrange that even big structural timbers may be regularly rubbed over, they will be free from attack. For this purpose it may be well to order that a little beeswax be used, partly because it actually does protect the wood, and partly because those employed in rubbing the surface of timber will do it more thoroughly when they apply wax than when they are told to rub alone. But only a little wax should ever be applied.

Dry Rot.

There is still confusion in the minds of many as to how dry rot may be recognised. The dry powdering of wood, especially of sap wood, which accompanies the activities of wood-worm is sometimes wrongly described as dry rot by those unfamiliar with its real nature. Dry rot is the condition of timber which is giving nourishment to certain fungi, and particularly that known as Merculius Lacrymans. The fungus spreads rapidly, and when discovered, the affected timbers and the walling near-by should at once be treated. It is the regular practice in commercial work to remove and burn the infected wood, except in the very initial stages. In initial stages of the rot the following preparations are recommended, and all the timbers and walling near the affected part should also be treated.

The most effective preventive is a 5 per cent. solution of corrosive sublimate in water, but it is poisonous and should only be used by those who understand its dangers, and can be trusted to take proper precautions against them. A less effective but safe solution is 5 lb. of zinc sulphate dissolved in a gallon of water. Again, three-quarters of a pound of sulphate of copper dissolved in one gallon of water is useful, but this should not be used from a metal container. It should be brushed or sprayed on. A surface treatment with creosote is also useful, but as this discolours timbers it is not everywhere a suitable material. Picric acid may also be used successfully, but again it affects the colour, turning everything to which it is applied a brown gold.

Rot due to alternate wet and dry can only be checked by making sure that the timber affected is kept quite dry or permanently immersed in water. The former case is the one which concerns the structural timbers of buildings, and the cure is nothing more than to prevent the entry of moisture from penetrating through roofs and walls or rising from the ground. It seems also that the wood-worm is especially active where timber is occasionally wetted owing to leaks in the roof covering.

It has been suggested that carved or moulded woodwork that has become frail through one or other form of rot may be hardened and to a certain extent consolidated by applying a solution of magnesium fluosilicate—one pound of salts to a gallon of water to make the solution.

The Treatment of "Shakes."

It has been remarked that open "shakes," that is, the splits which appear in big timbers during seasoning, when they are exposed to weather may encourage rot by allowing rain to reach the heart of the wood. In such positions, when "shakes" are bad, they should be stopped, and the following sentences may be of use in suggesting a way of doing this.

Of old it was sometimes the custom to stop these crevices with run putty mixed with hair. But it seems that this is not a very satisfactory method, for putty does not altogether check the entry of water, and when once set has little or no ability to expand and contract with any seasonal movement which may take place in the timber. It would seem preferable to caulk these cracks as the decks of ships are caulked with bituminous mastic and hemp. Where the "shakes" are very wide, it may be well to fill them with strips of dry oak bedded in this material. Under shelter, so long as "shakes" do not materially weaken timbers they are harmless except as affording the beetle convenient crevices wherein to lay her eggs.

(To be continued.)

Aycliffe Mental Colony, Durham.

Messrs. Rees & Holt, FF.R.I.B.A., of Liverpool, have been appointed to prepare the plans for the extensions to the Aycliffe Mental Colony at Aycliffe, near Darlington, for the Durham County Council.

ILLUSTRATIONS

The Durham Light Infantry Memorial Screen.

The screen illustrated forms a portion of the War Memorial formed in the south transept of the Cathedral to the Durham Light Infantry. The eastern aisle of the transept has three bays, the southern of which is a sacristy, and this screen forms the division which separates the sacristy from the other two bays which constitute the essential Memorial Chapel. The altar is in its original position. Two of the Norman pillars belonging to it were still *in situ*, and are brought again into service. The Chapel is separated from the north choir aisle by a screen which incorporates portions of the well-known seventeenth-century work of Bishop Cosins. The screen illustrated is executed in oak, and includes regimental emblems, an appropriate inscription and heraldry. Figures of St. George, St. Cuthbert and St. Oswald complete the scheme. The better to serve the light, the upper part of the screen is left open. The screen has been admirably executed by Messrs. Cornish & Gaymer, Ltd., of North Walsham, Mr. Hitch, of Kennington, being the sculptor.

Mr. W. D. Caröe, F.R.I.B.A., was the architect.

The Lodge, Bedfont House, Walton-on-Thames.

This building is constructed with hollow brick walls externally rendered in cement finished in "Atlas White." The roof is covered with "Langley" green glazed pantiles. Messrs. W. H. Brown, Ltd., of Leatherhead, were the builders, and Messrs. A. Purcell Lay, A.R.I.B.A., and Will Kidd the architects.

Conversion of Farm Buildings.

This work shows the conversion of some old farm buildings into an Artisans' Club-room and four cottages, etc., for the Effingham Manor Golf Club, Effingham, Surrey. The original buildings of Warren Farm were for the greater part built of flint walling with later additions of brick and concrete, and were generally in a dilapidated and insanitary condition. The additions and alterations have been executed in stock brickwork, and the whole of the premises rendered externally with stucco, coated with limewash and roofed with Welsh slates. The external doors to the cottages and club-room, etc., are painted with dolphin green. The courtyard is laid out as a formal garden for the use of the occupants of the cottages. The cottages will accommodate the green-keepers and other members of the outdoor staff, whilst the club-room is provided as a social centre and headquarters for the members of the Artisans' Club and their friends. The work has been executed by Mr. W. F. Goodchild, 192, Trinity-road, London, S.W.17, and was completed six months after the signing of the contract.

The architects were Messrs. A. Purcell Lay, A.R.I.B.A., and Will Kidd.

New Throne, St. Paul's Cathedral.

We illustrate on our frontispiece and Notes pages the new throne which has been erected in the chapel of St. Michael and St. George, St. Paul's Cathedral. Mr. Henry Poole, A.R.A., worked on the carving in his Chelsea studio for six months. The joinery has been carried out by Mr. Will Maides and Mr. Ernest Maides, of Croydon, who have assembled the throne under the direction of Mr. Mervyn E. Macartney, F.R.I.B.A., the Cathedral Surveyor. There are three seats, the centre one for the Sovereign, and those on either side for the Prince of Wales and the Chancellor of the Order. Above the curved pediment rises a tabernacle, and at the summit is a crown. The throne is 25 ft. high and 18 ft. wide. The dark oak and lime woods used are in keeping with the Grinling Gibbons work in the cathedral and with the prelate's throne. These two thrones are part of a new seating scheme for the chapel. The remainder will take the form of gracefully carved seats for the officials of the Order.

Foord Almshouses, Rochester.

We illustrate this week an aerial photograph of the Foord Almshouses at Rochester, designed by Mr. E. Guy Dawber, A.R.A. A perspective drawing of these buildings was given in our issue for May 13, 1927.

A New Paris Concert Hall.

The new "Salle Pleyel," Paris, which is illustrated in this issue and described on page 740, has been erected from the designs of M. Gustave Lyon, engineer, in conjunction with M. Auburtin and MM. Granet and Mathon, architects.

Work by the Late Temple Moore.

In connection with the paper read by Mr. H. S. Goodhart-Rendel at the R.I.B.A. on Monday evening last (a report of which is given elsewhere in this issue), we illustrate this week some church work designed by the late Temple Moore.

Grove Park Housing Scheme, Lewisham.

We illustrate this week plans of the housing scheme at Grove Park for the Borough of Lewisham. This work has been designed and carried out under the direction of Mr. W. R. Davidge, F.R.I.B.A. The contractors for the first two sections were Messrs. Wm. Griffiths, Sons and Cromwell, of London and Liverpool, and the third section of the scheme is now being executed by Messrs. David Weston and Co., Ltd., of London. A description of the work is given on page 736.

MEETINGS.

These are given on page 745.

CORRESPONDENCE

Charing Cross Bridge.

Sir,—I write as one of those who took a leading part some years ago in endeavouring to formulate some feasible proposals in connection with Charing Cross Bridge. I served on the Special Committee of the London Society for the consideration of the various projects, and the conclusion was forced upon me at a very early stage that the problem would never be satisfactorily solved until someone had investigated the railway problem connected with it. I soon realised, also, that the present position of Charing Cross Station is one which can no longer be defended as a public necessity. It is a luxury for the use of a small minority which London can no longer afford. No doubt, if a census were taken, it would be found that quite a large proportion of the people who use the station continue their journey to other parts of London by Tube or omnibus, and if this is so, there is no reason why they should not do so from a station on the south side of the river.

An effort was made in 1918 by the Sub-Committee of the London Society to convince the Board of Trade and the railway companies of the necessity of a general plan to knit the London railways together in accordance with the recommendations of Select Committees of the Houses of Parliament, which have been made year by year since 1863. In their report it was shown that, so far as trunk lines are concerned, every purpose could be served by *one terminus* for the Southern Railway. The reasons for this contention are clearly stated in an article on "London Railways" contained in the book published by the Society, entitled "London of the Future." In my interviews at the time with various officials of the Railway Companies upon this contention, I elicited various opinions to the effect that present arrangements were obsolete, but that it would be impossible in the present condition of affairs for the companies to take the initiative.

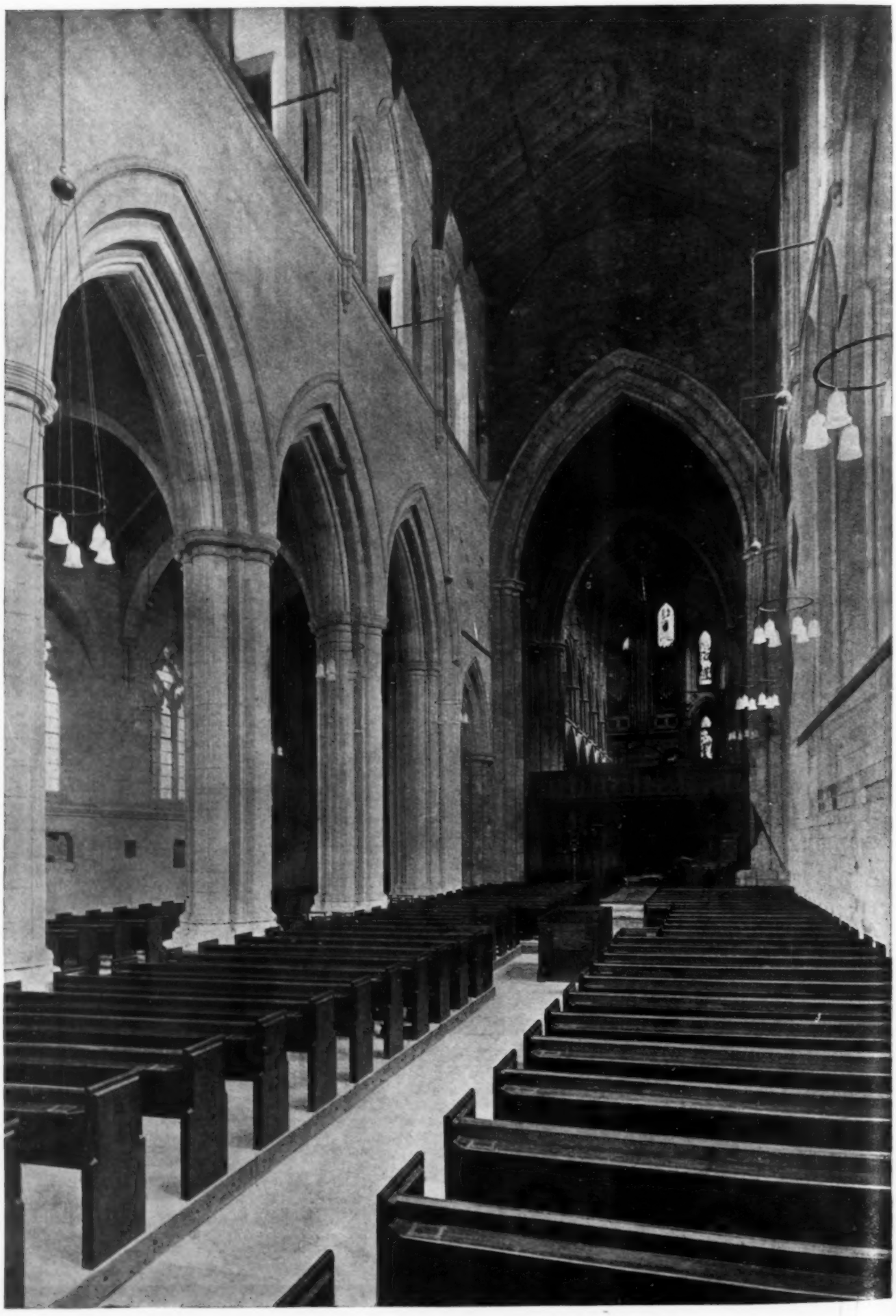
The Report of the Bridge Commission deals with all the bridges. Would it not be possible, in view of the engineering difficulties in connection with the double-decker bridge, and also of the extreme difficulty in allocating the cost of the combined bridge between the road authority and the railway company, for a supplementary report to be prepared dealing with this alternative aspect of Charing Cross Bridge? If that could be done, I think there is a strong probability that the scheme would ultimately be confined to a road bridge only, and the problem would become a much simpler one and also vastly more economical.

H. J. Leaning.

[Other letters are unavoidably held over.]

Conversion of Warren Farm Outbuildings, Effingham, Surrey, into Cottages and Club Room.

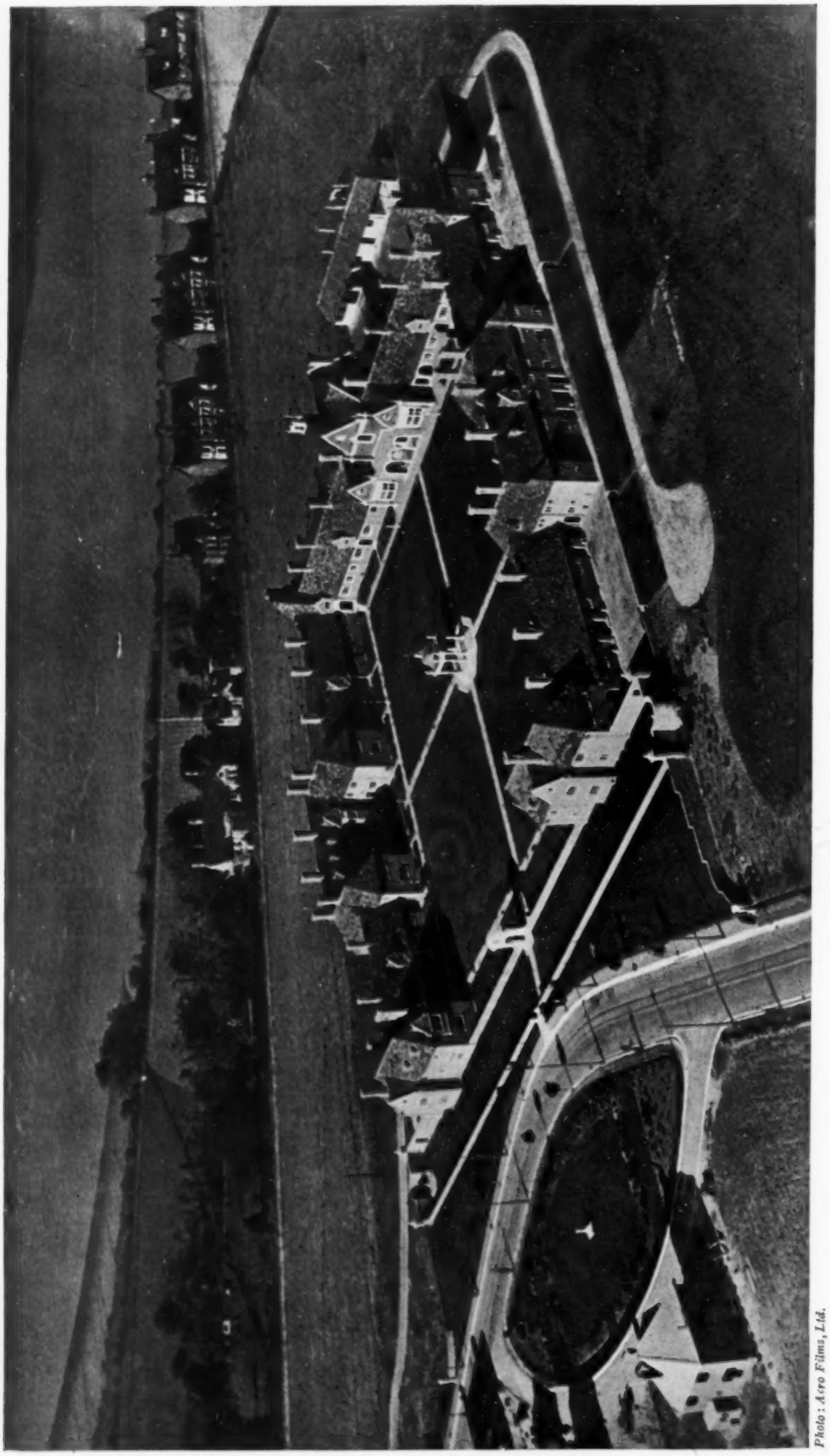
Messrs. A. Purcell Lay, A.R.I.B.A., and Will Kidd, Architects.



The Nave, Hexham Abbey, Northumberland.

The late Temple Moore, Architect.

UNIV. OF MICH.

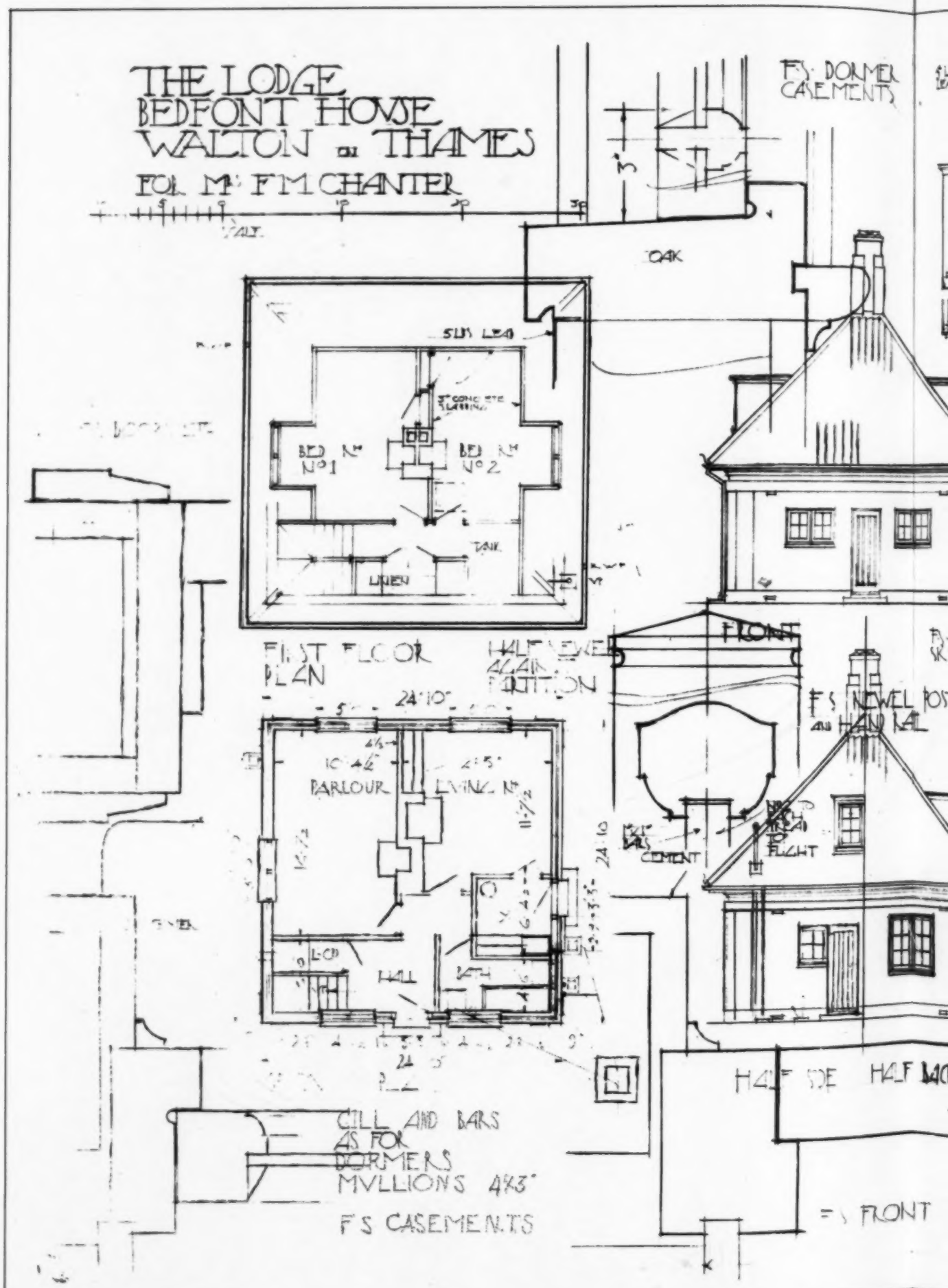


An Aerial View of the Foord Almshouses, Rochester.

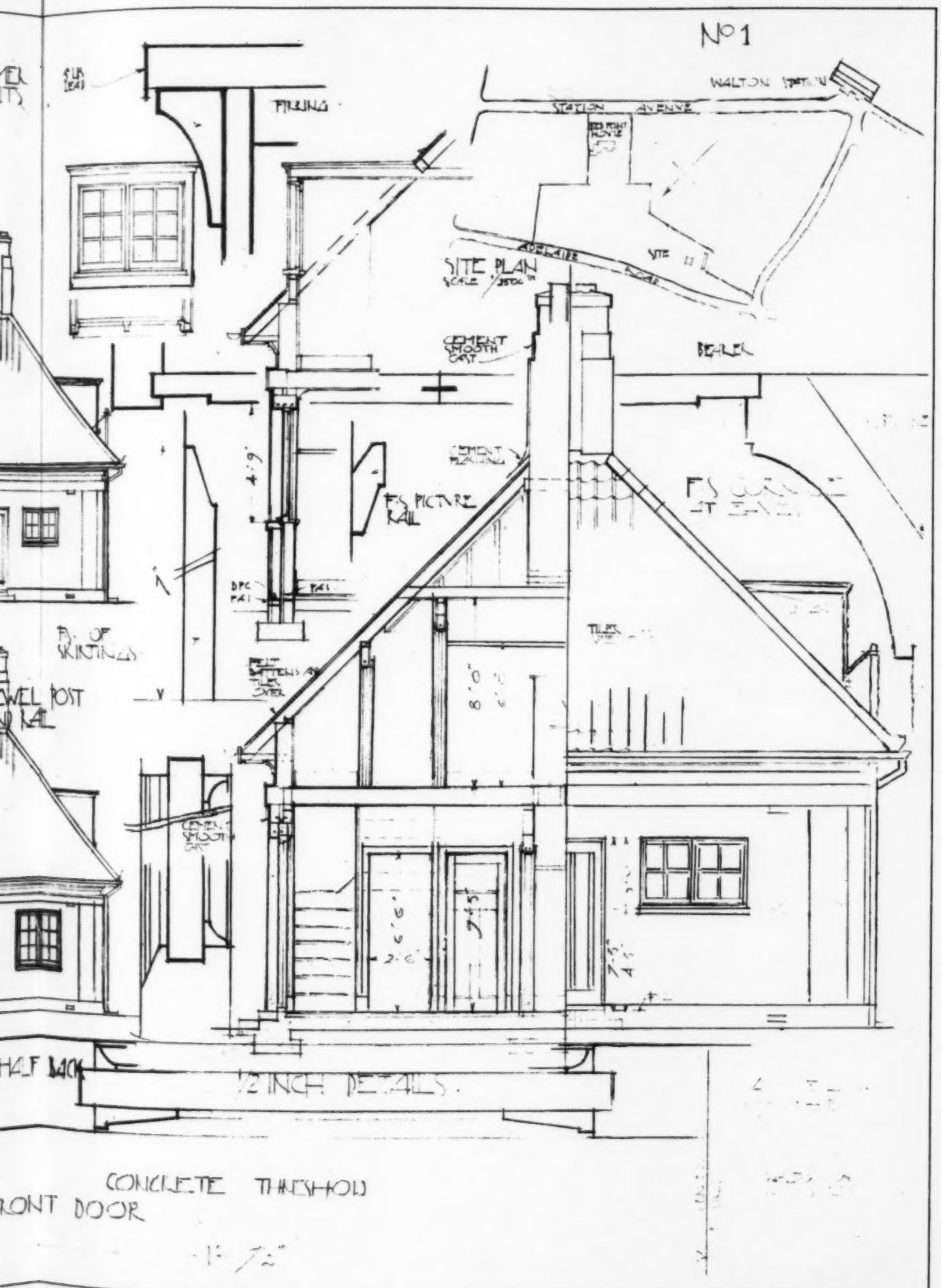
MR. E. GUY DAWBER, A.R.A., P.P.R.I.B.A., Architect.

Photo: Aero Films, Ltd.

UNIV. OF MICH.



Messrs. A. Purcell Lay, A.R.I.B.A., ar

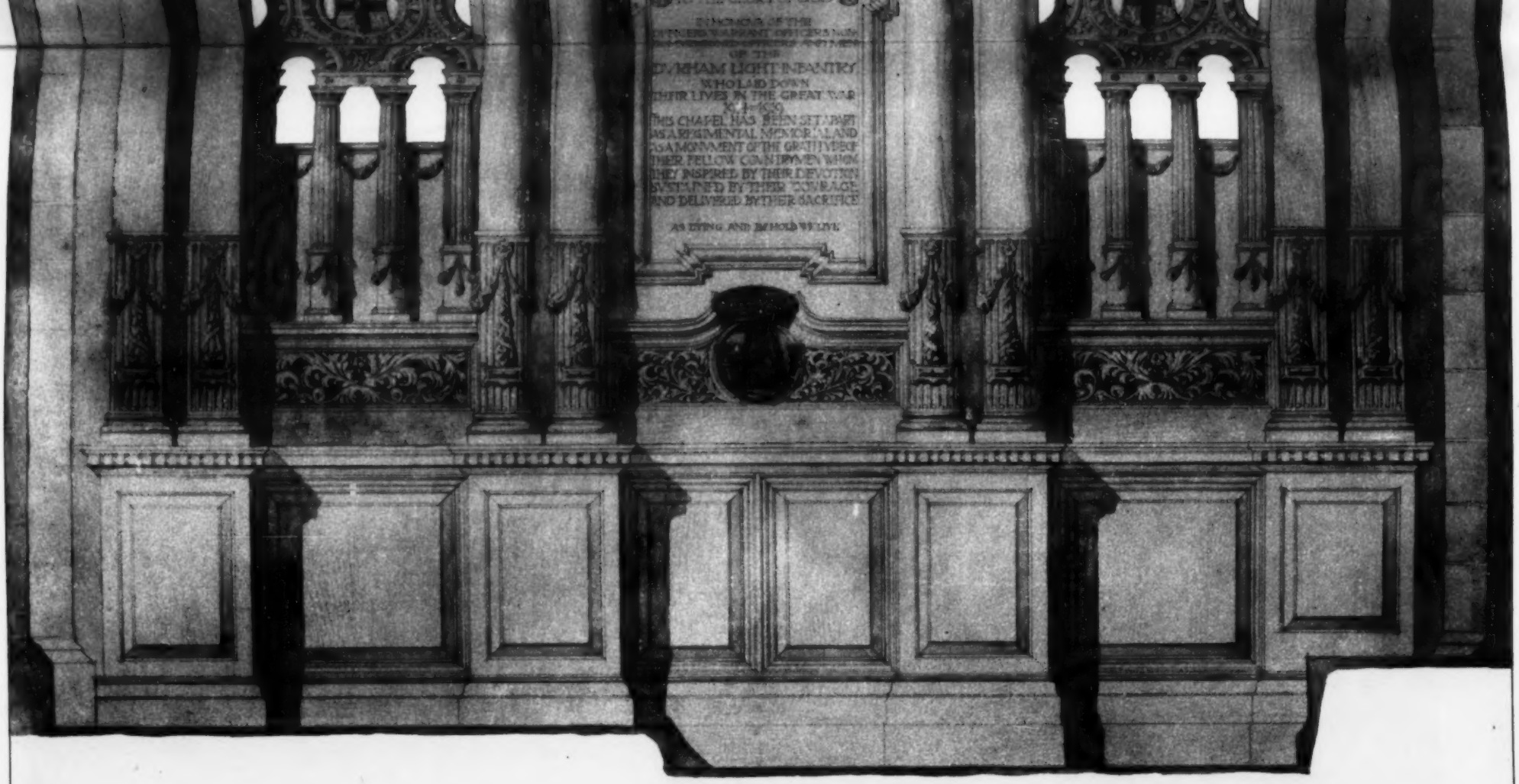


A.R.I.B.A., and Will Kidd, Architects.

DVRHAM CATHEDRAL

DVRHAM LIGHT INFANTRY MEMORIAL CHAPEL SOVTH SCREEN

SCALE


OF THE
DURHAM LIGHT INFANTRY
WHO LAID DOWN
THEIR LIVES IN THE GREAT WAR
1914-1919
THIS CHAPEL HAS BEEN SET APART
AS A REGIMENTAL MEMORIAL AND
AS A MONUMENT OF THE GRATITUDE OF
THEIR FELLOW COUNTRYMEN WHOM
THEY INSPIRED BY THEIR DEVOTION
SUSTAINED BY THEIR COURAGE
AND DELIVERED BY THEIR SACRIFICE
AS DYING AND BEHOLD WE LIVE

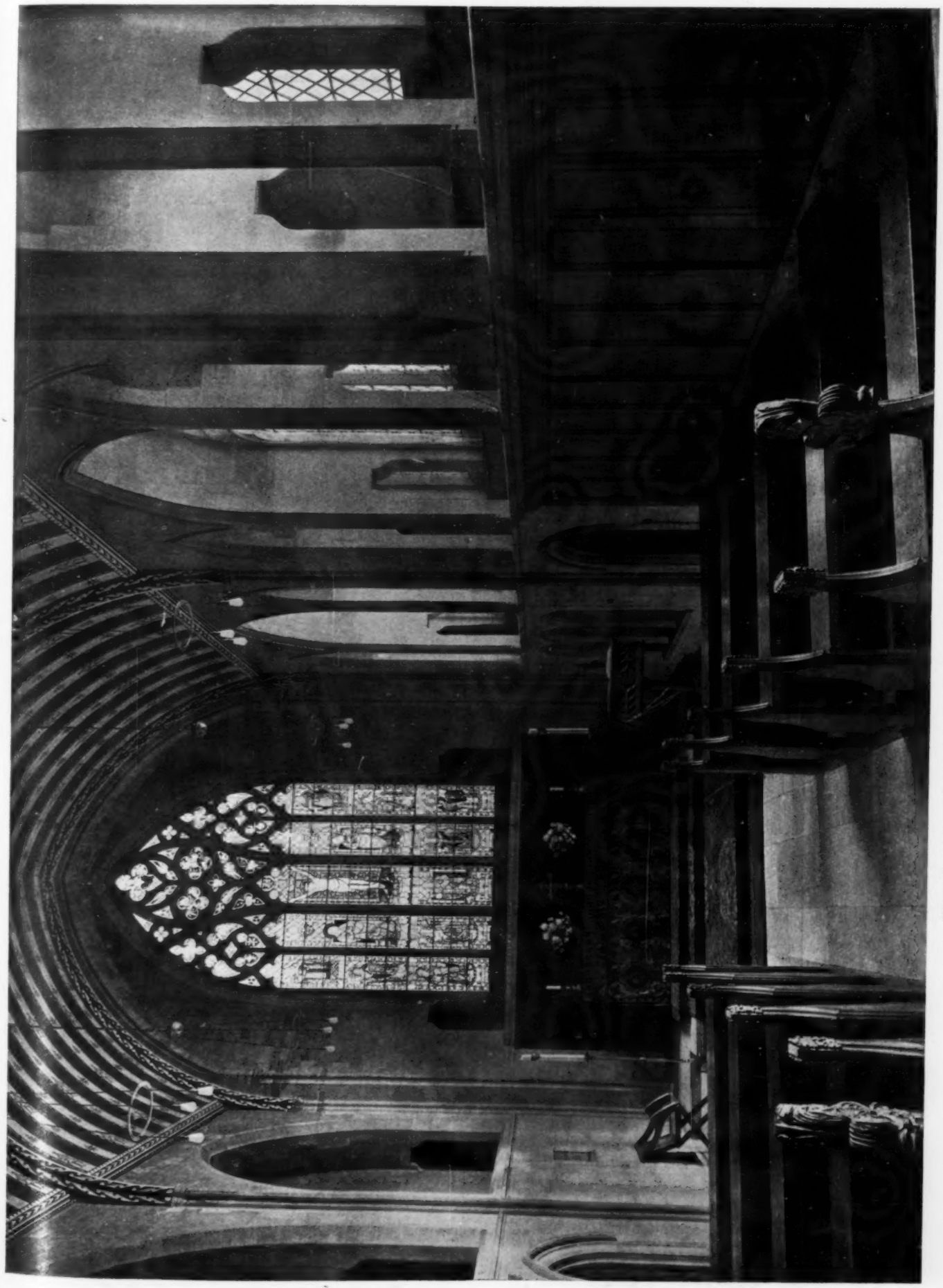
PLAN THROVGH LOWER PANELS

PLAN THROVGH VPPER PART

W. D. CARÖE . F.S.A. ARCHT
3. GREAT COLLEGE STREET
WESTMINSTER . S.W 1.

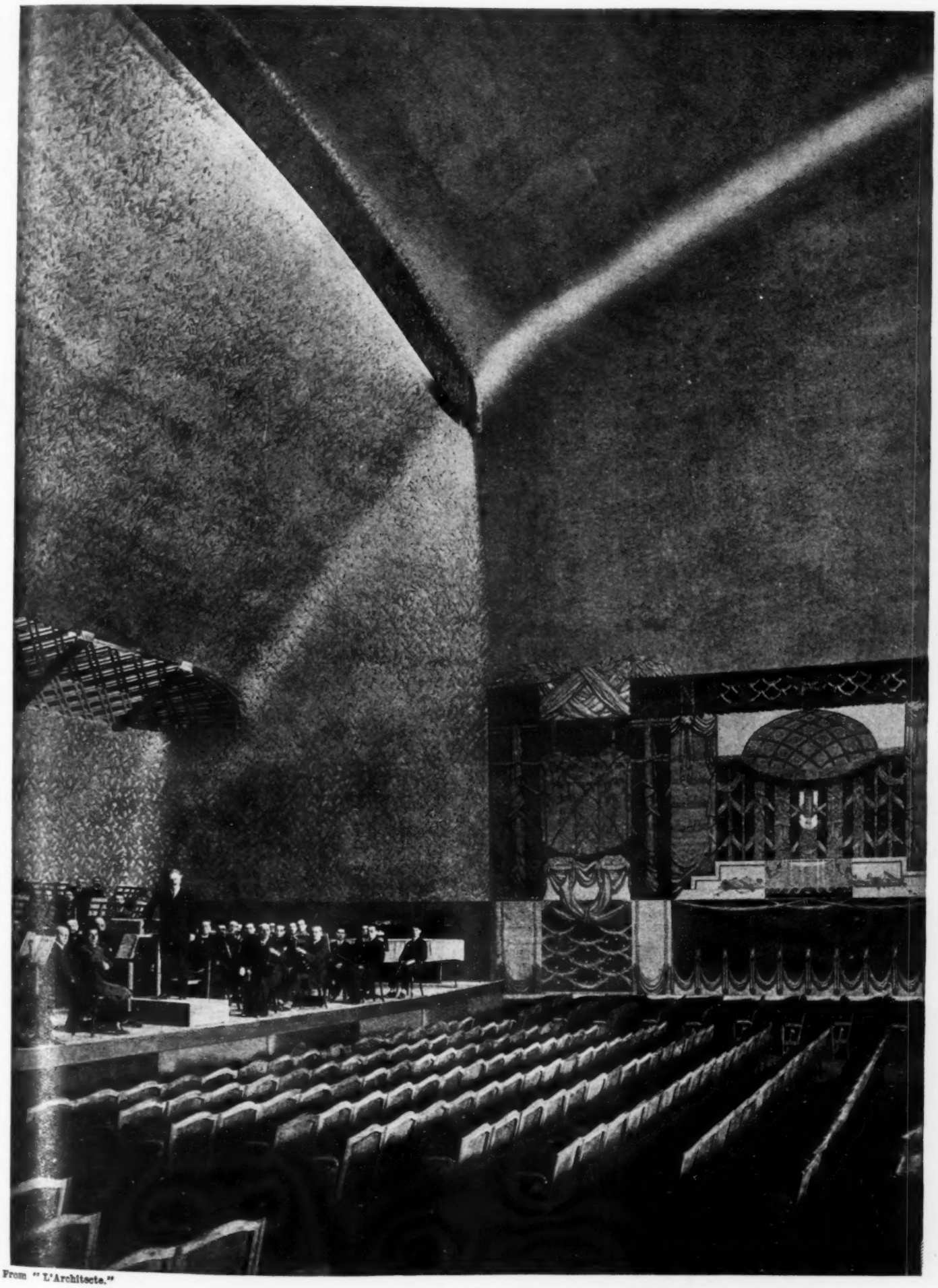
Mr. W. D. Caröe, F.S.A., F.R.I.B.A., Architect.

UNIV. OF MICH.



Chapel, Bishop's Hostel, Lincoln. The late TEMPLE MOORE, Architect.

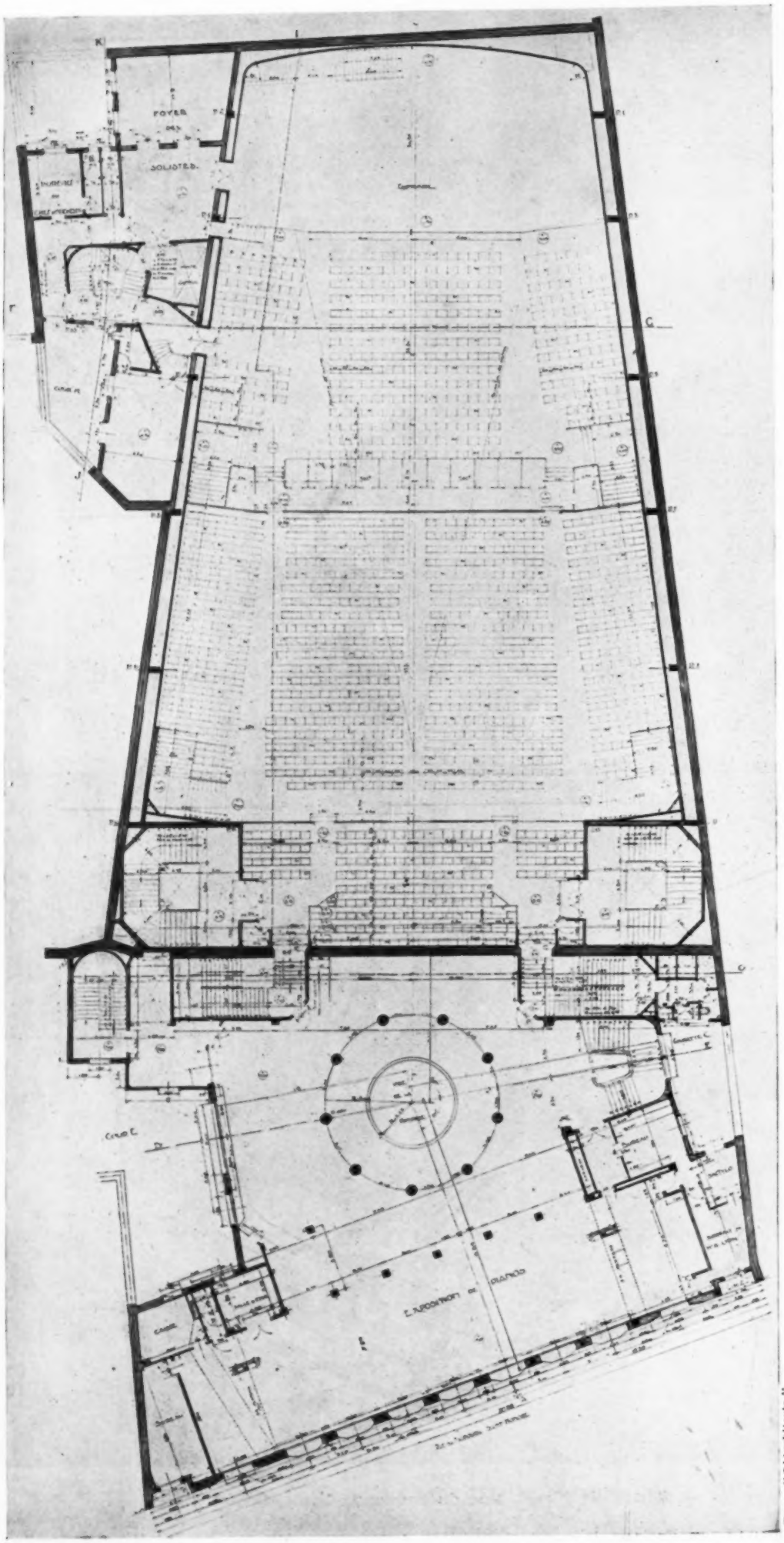
UNIV. OF MICH.



From "L'Architecte."

The Salle Pleyel, Rue du Faubourg Saint Honoré, Paris

M. Gustave Lyon, Engineer, in conjunction with M. Auburtin and MM. Granet and Mathon, Architects.

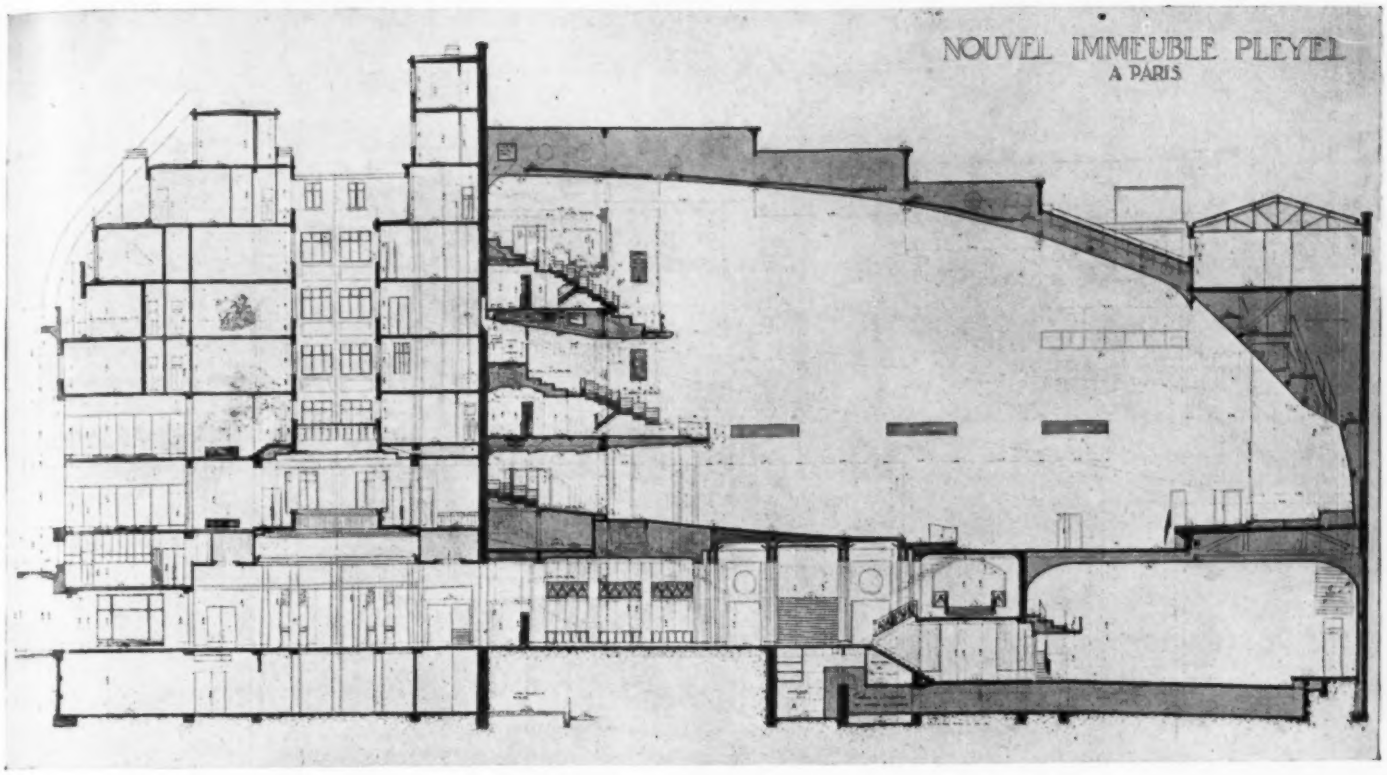


First-Floor Plan.

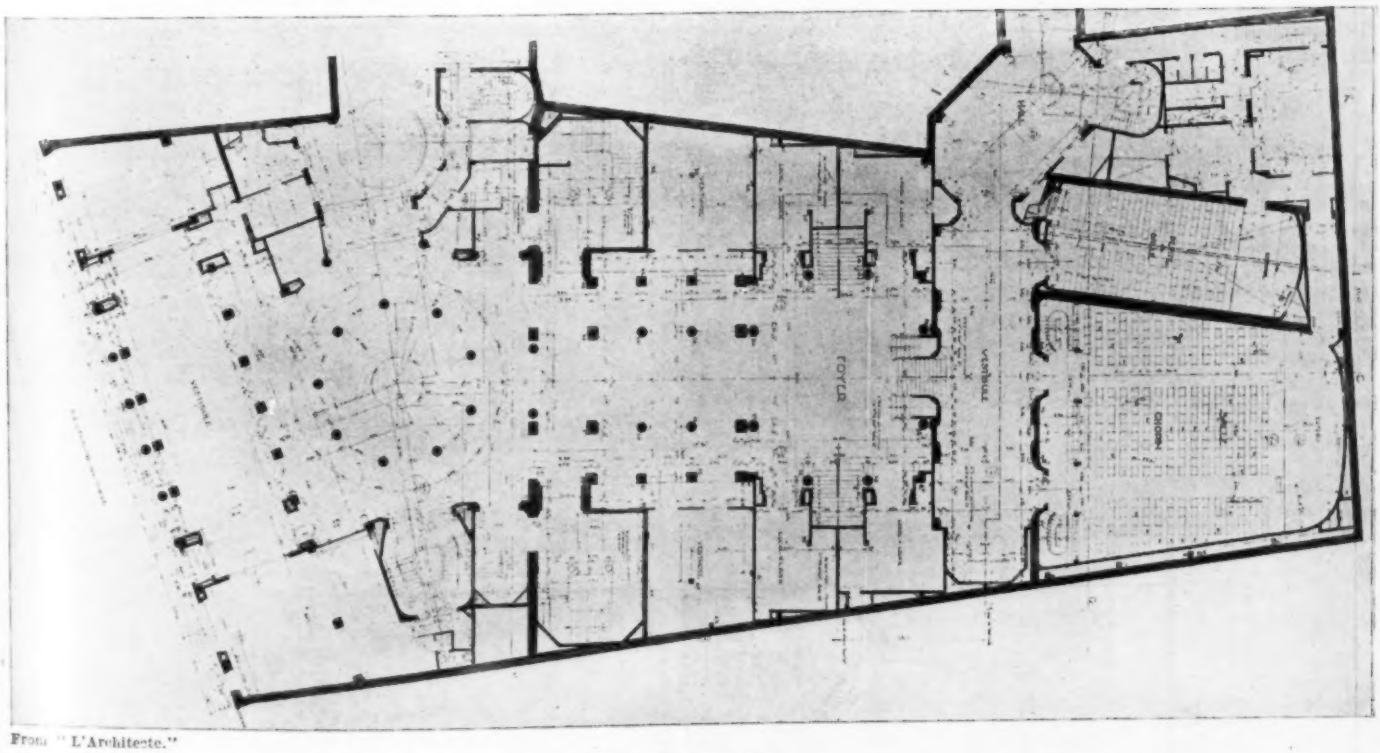
The Salle Pleyel, Rue du Faubourg Saint Honoré, Paris.

M. Gustave Lyon, Engineer, in conjunction with M. Auburtin and MM. Granet and Mathon, Architects.

From "L'Architecte."



Longitudinal Section.



From "L'Architecte."

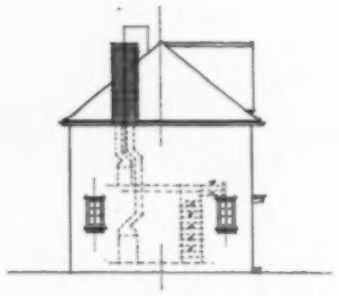
Ground-Floor Plan.

The Salle Pleyel, Rue du Faubourg Saint Honoré, Paris.

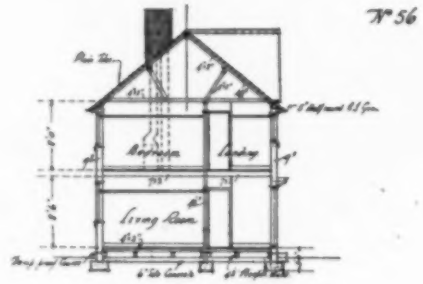
M. Gustave Lyon, Engineer, in conjunction with M. Auburtin and MM. Granet and Mathon, Architects.

BOROUGH of LEWISHAM
CROVE PARK HOUSING SCHEME
SECOND SECTION
Block of Four Houses-A Type

Block of Six Houses. BLOCK 62 (Refer to Drawing No 51 for position on the Site)

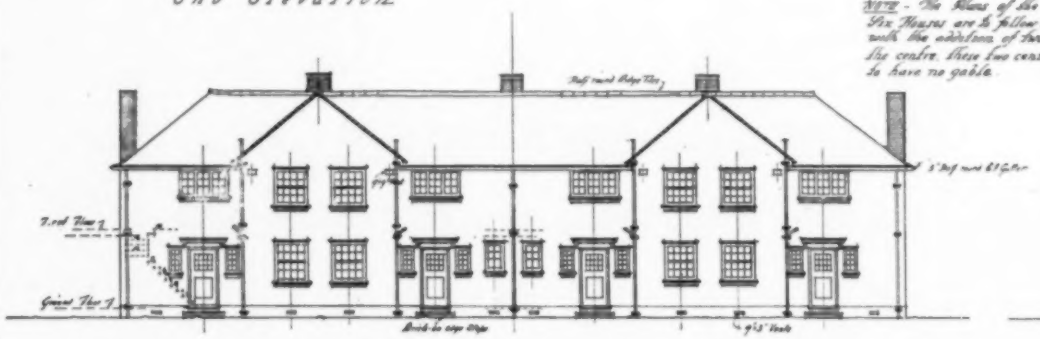


End Elevation

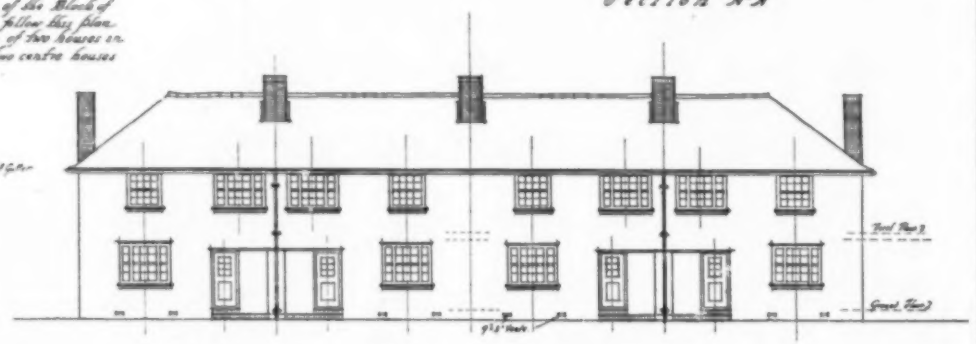


Section AA

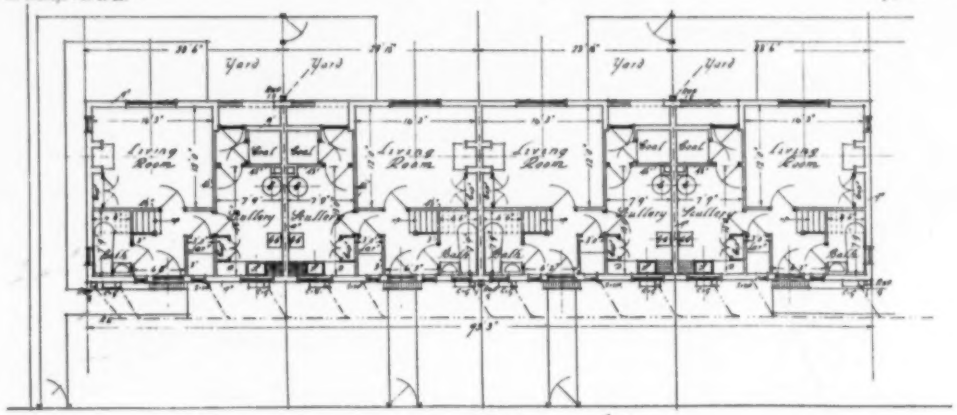
NOTE - The Plans of the Block of Six Houses are to follow this plan with the addition of two houses in the centre. These two centre houses to have no gable.



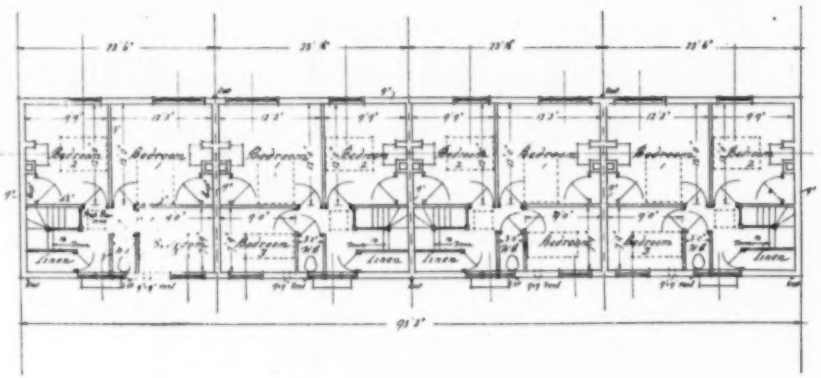
Front Elevation



Back Elevation



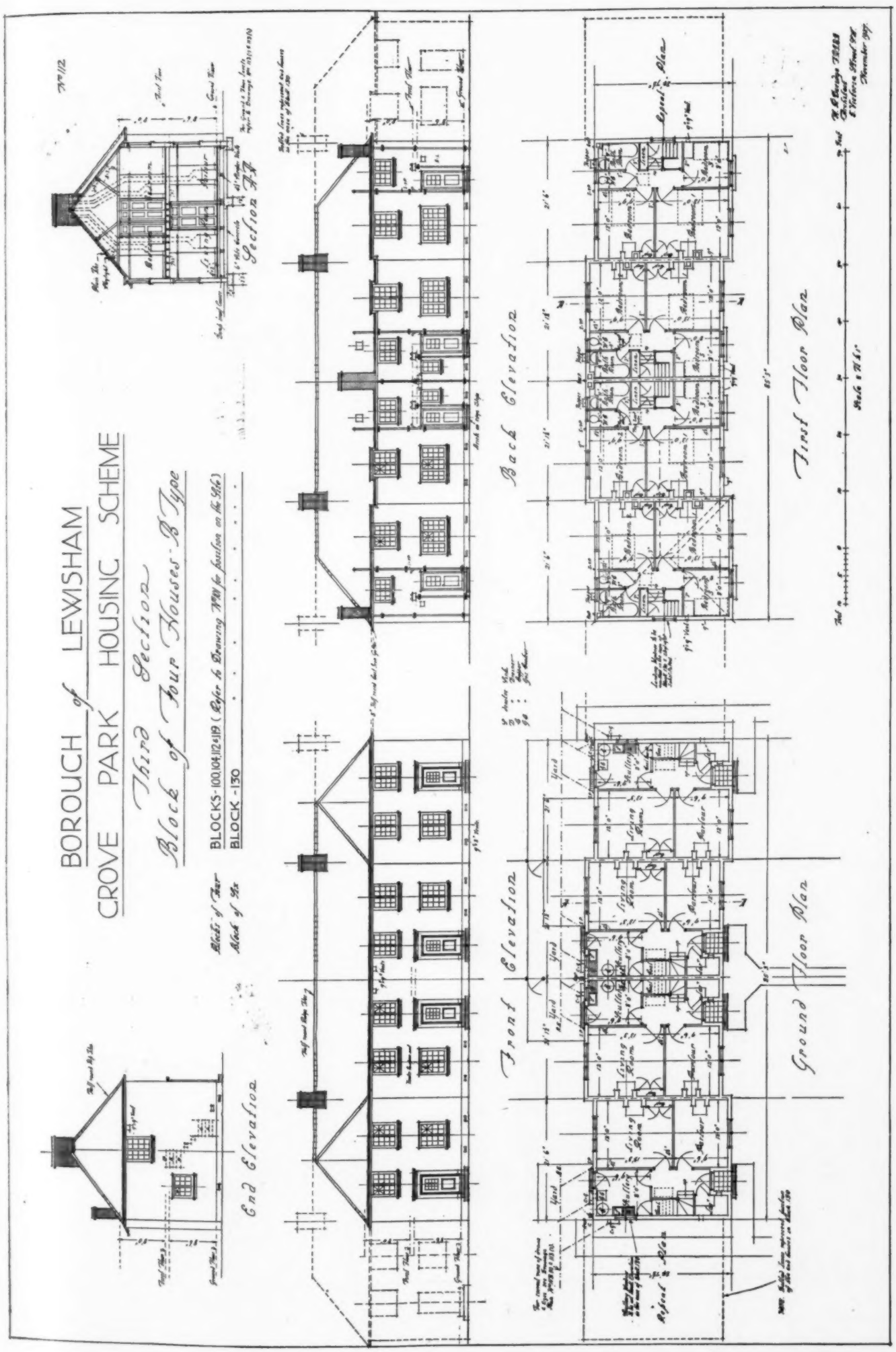
Ground Floor Plan



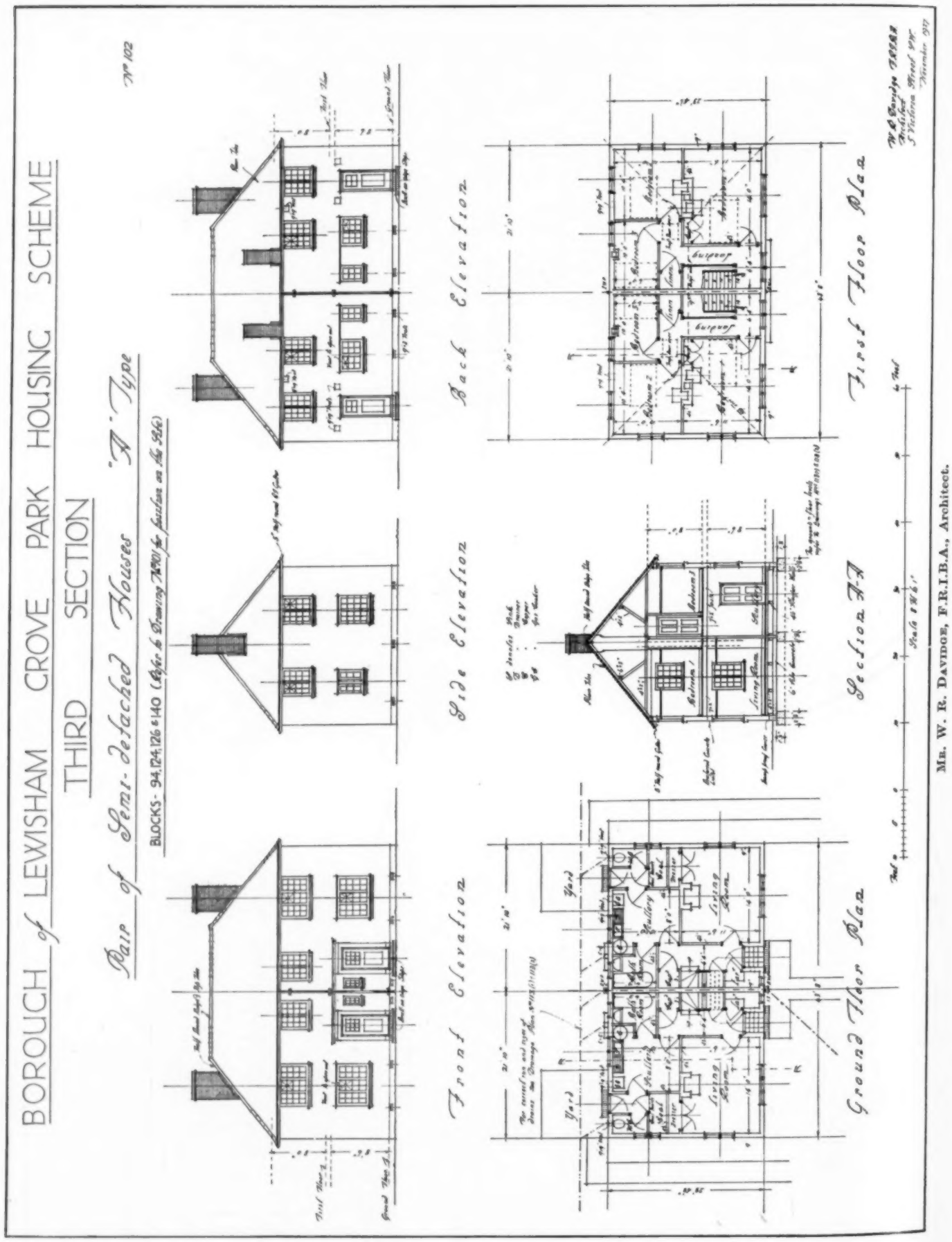
First Floor Plan

W. R. Davidge F.R.I.B.A.
Architect
5 Victoria Street S.W.
Dec 1926

Mr. W. R. Davidge, F.R.I.B.A., Architect.



Mr. W. R. Davidge, F.R.I.B.A., Architect.



Mr. W. R. Davidge, F.R.I.B.A., Architect.

BOROUCH of LEWISHAM CROVE PARK HOUSING SCHEME (Third Section)

Pair of Semi-detached Houses "B" Type

BLOCKS 90.99.101.102.103.113.114 118.131.133. (Refer to Drawing No 110 for position on the Site)

Back Elevation

Side Elevation

Front Elevation

First Floor Plan

Section AA

Ground Floor Plan

W. R. Davidge FRIBA
Architect
5 Victoria Street SW1
November 1927

Mr. W. R. DAVIDGE, F.R.I.B.A., Architect.

GROVE PARK HOUSING SCHEME

On the fringes of South-East London another housing scheme is nearing completion, which will be capable of satisfactorily accommodating nearly 2,000 of the population of the borough of Lewisham. Two years ago the site, on the upward slope of ground leading south from the built-up areas of Lewisham towards Elmstead Woods, was some of the old pasture land that appears to loiter fantastically on the edge of London awaiting a premeditated end. Naturally the site, covering 43 acres, is full of character, the ground rising continuously from the northern end, where the level is 141 ft. above O.D. to 227 ft. at the south-east corner; there is also a pronounced fall in the land from the centre of the site towards the west.

On such a site it was not possible to impose a lay-out in any way geometric or formal in principle, the formation of the ground being far too strongly apparent to allow of anything but recognition, the very number of houses it was possible to group together in one block being controlled by the sudden variance in the level of the ground, which precluded the use of continuous united blocks forming quadrangles. The roads were graded to slope up and down the contours, a factor giving great effect to the skyline formed by the house roofs, which at a distance emphasise the varying planes of the ground.

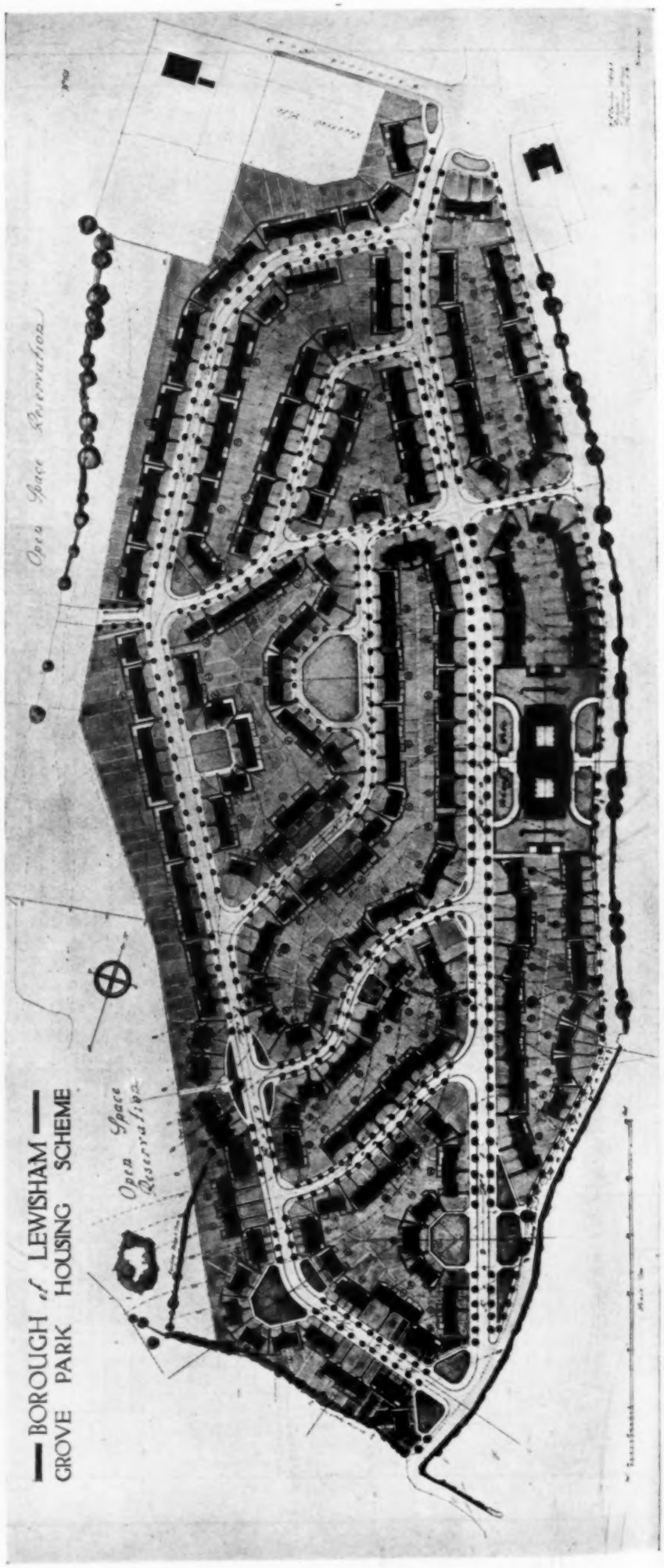
Beyond the difficulties presented by the assertive character of the actual ground there was the uncertainty as to whether the subsidy would be continued throughout the period of time necessary for the complete development of the site, to be contended with. This necessitated the conception of a lay-out capable of satisfactory division into three distinct sections each complete in itself, but at the same time lending itself to the possibility of further extension. The three sections of the scheme together allow for approximately 500 houses, including 32 flats.

Provision was also made for a school site and permanent open space reservations, a natural area on the crest of the hill with wide views to the north, and level ground below on the west side of the site for recreational purposes, forming a continuous belt along the boundary of the estate.

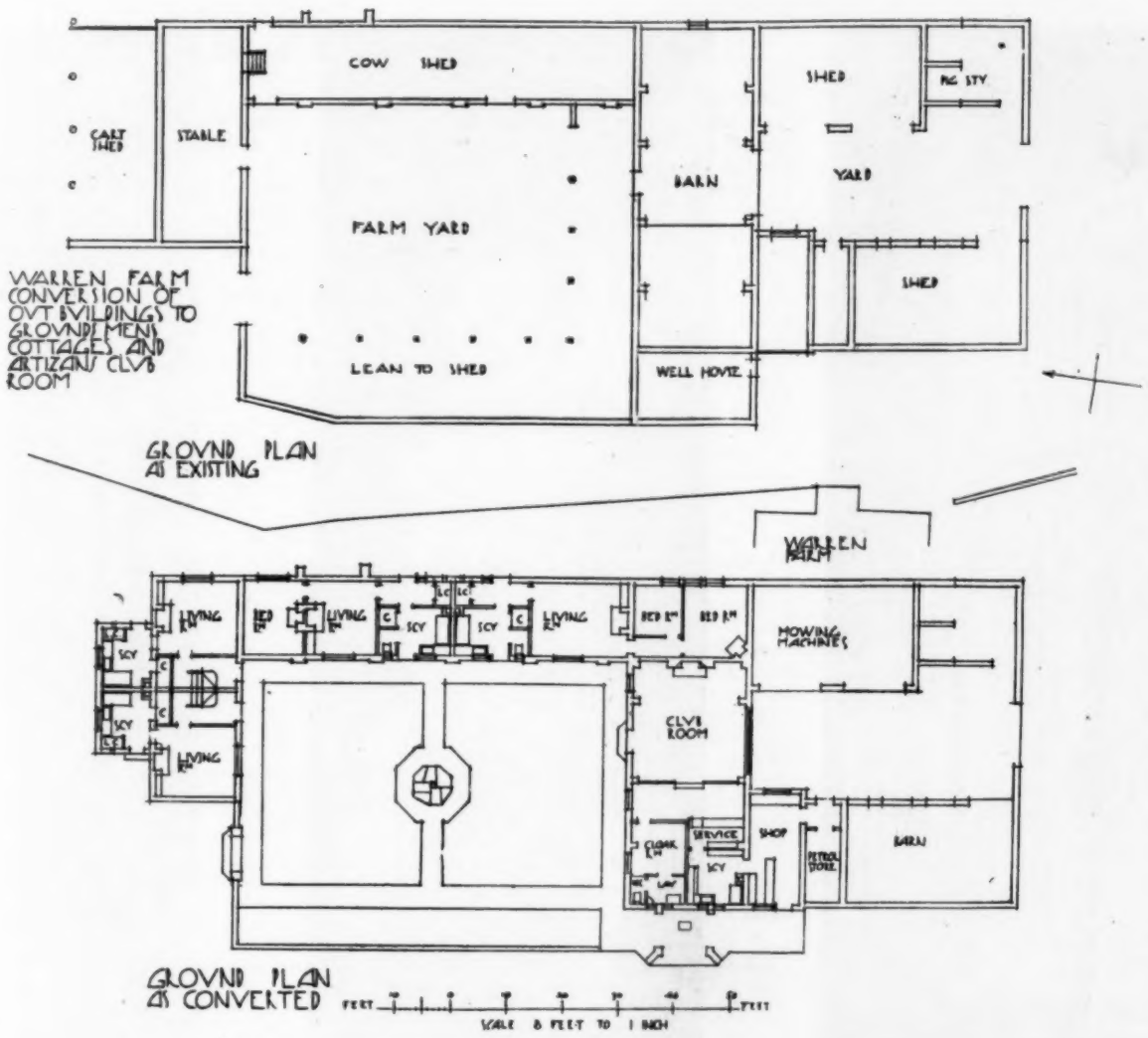
As is frequent in such cases, the houses themselves provide for three classes of accommodation, constituting parlour and non-parlour houses, and blocks of two-storied flats. Great attention was given to the planning of each class, relatively as much variation being devised in the actual details of the planning in consideration of aspect as in the external effect of the houses, which, in view of the restrictive influence of economy, largely rely on the careful and successful disposition of the window and door openings in relation to the plain wall surfaces leading to a certain subtlety of proportion, which is the underlying basis of the designs conceived.

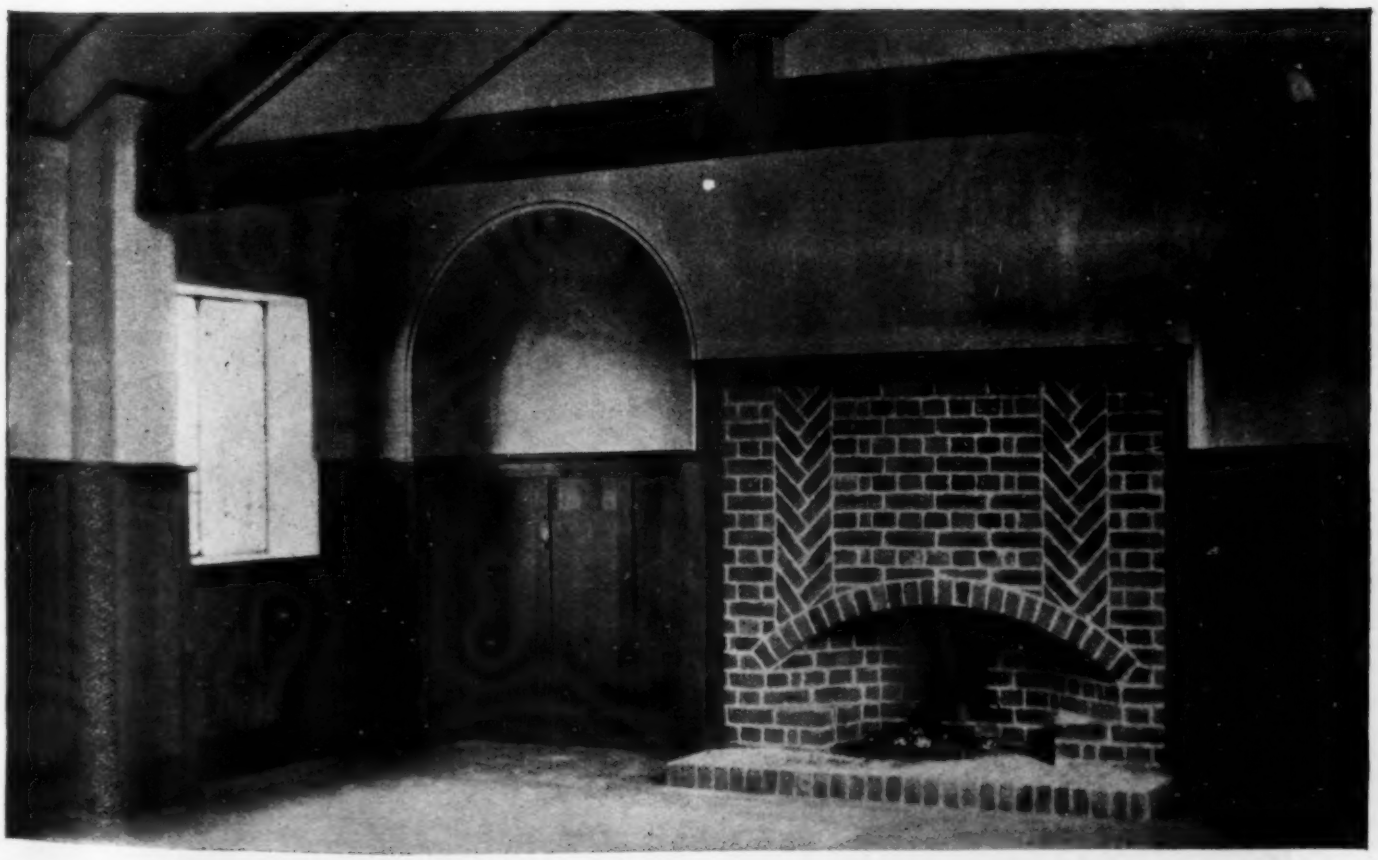
Generally speaking, the houses are constructed of brickwork rendered externally in cement, left rough from the float, scored to give a texture to the wall surface and treated with varying shades of colour wash, the tarred bases of the walls in contrast having the appearance of a plinth. All doorsteps, window sills and stacks have been carried out in purple and red facing bricks, which form a link, and an harmonious blend of colour with the hand-made bundled and red sand-faced tiles of the roofs. To give general interest a certain number of houses are constructed in multi-coloured facing bricks, a different series of details being employed, the window openings and doorways of these houses are arched and make a complete contrast to the formal architraves and moulded hoods of cement combined with the general cement work. The provision of internal porches with quarry floors to some of the blocks form an interesting feature.

The work has been designed and carried out under the direction of Mr. W. R. Davidge, F.R.I.B.A. The contractors engaged on the work are given under "Illustrations," page 727.



Mr. W. R. Davidge, F.R.I.B.A., Architect.

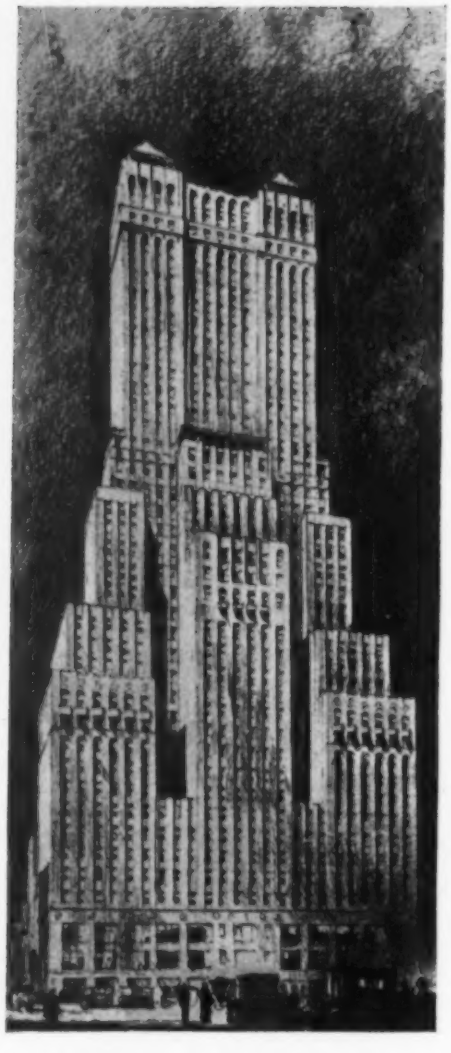




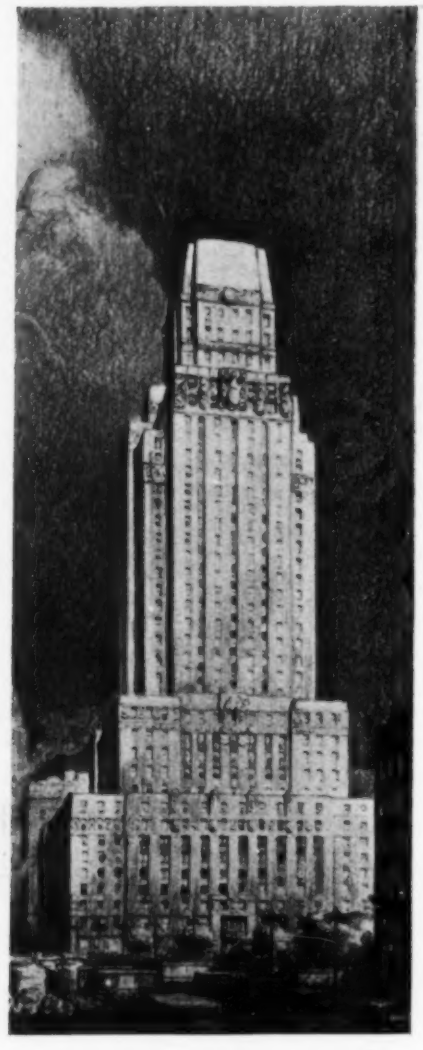
ARTISANS' CLUB ROOM.

Conversion of Warren Farm Outbuildings, Effingham, Surrey, into Cottages and Club Room.

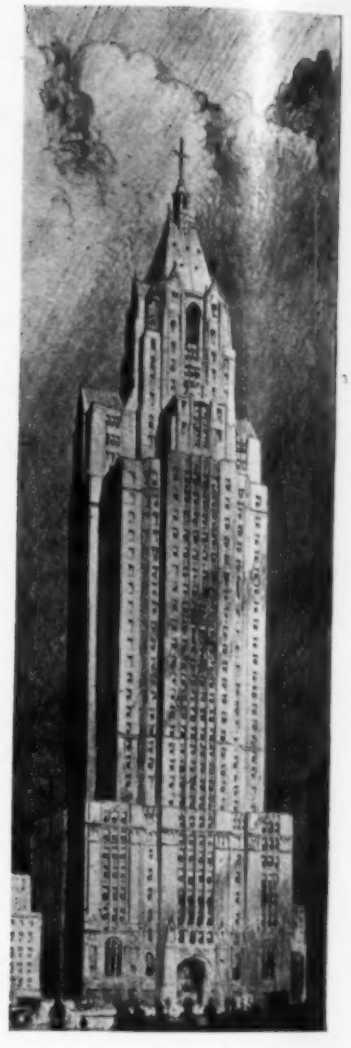
MESSRS. A. PURCELL LAY, A.R.I.B.A., and WILL KIDD, Architects.



Building designed for Madison Avenue and 59th Street, New York City.

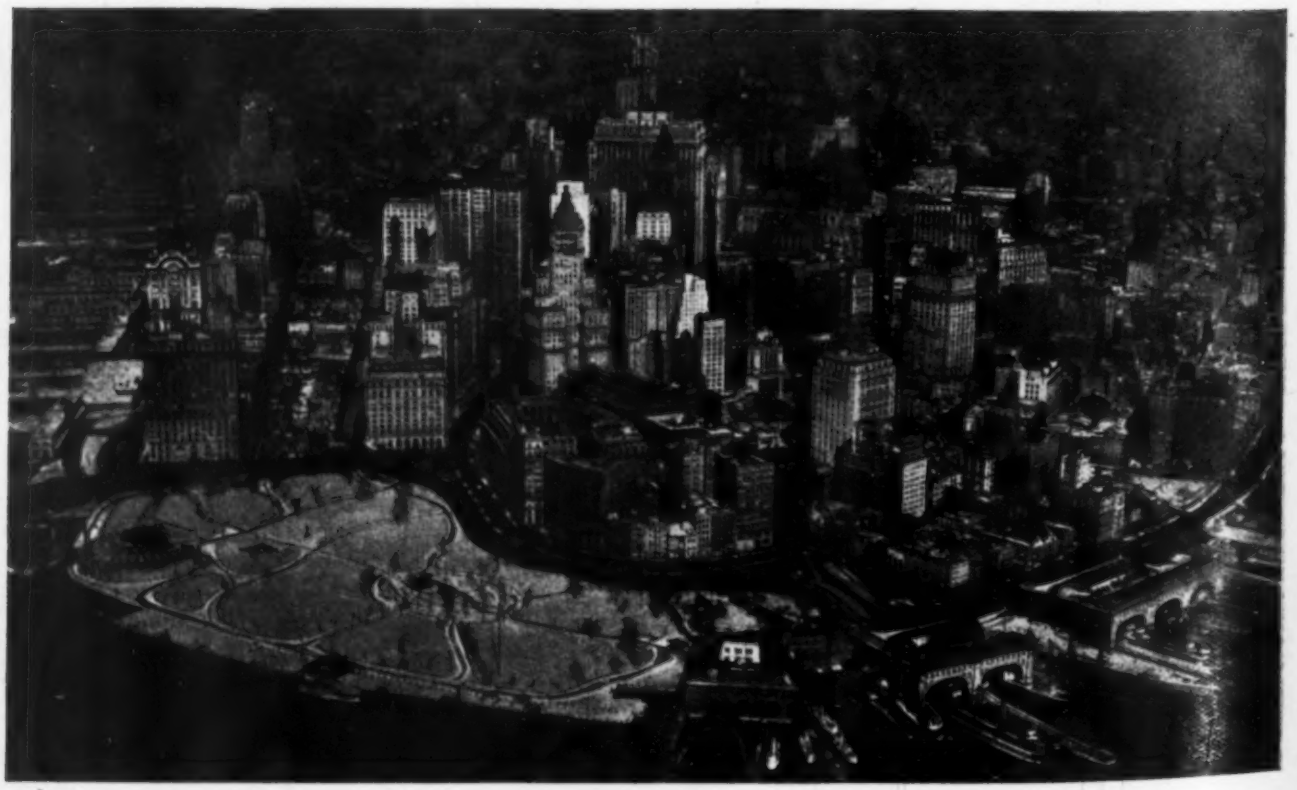


Thirty-four Story Building designed from Primitive American Motives.



Proposed Church and Office Building, Dallas, Texas.

Modern American Architecture. Designs by Mr. Alfred C. Bossom, F.R.I.B.A.



An Air View of New York City.

AMERICAN ARCHITECTURE

MR. ALFRED C. BOSSOM, F.R.I.B.A., read a paper on "American Architecture" before the Royal Society of Arts, on April 18, at John Street, Adelphi, W.C.2.

The lecturer said that American architecture was the skyscraper! If the United States were to end to-morrow the skyscraper, probably, would be looked upon as that country's greatest contribution to world development. Its history was a romance and he, the lecturer, would endeavour to tell the intimate story of its early struggles, which—unless recorded there and then, would very likely be forgotten, as the men most concerned were fast passing away. Skyscrapers were totally inappropriate for England, whose cities were built on their old foundations of the 16th and 17th centuries, when three or four stories were the total height of the buildings. The sun in the British Isles was too low in the heavens to penetrate narrow streets if lined with mammoth structures; the atmosphere was loaded with dampness, frequently foggy, while the English temperament was opposed to such publicity both in living and working, as this co-operative type of building compelled.

Definitely, skyscrapers were not for the British Isles, but we could gather from their experience to our material advantage. The Americans had pioneered in new architectural fields; they had utilised old-world knowledge and standardised constructions in ways that would be of considerable help to England, and without danger of losing the beauty or charm of our English architectural character. Forty years ago the present phenomenal age of invention started, and since then America had gathered and evolved a new building science. Never in the world's history had an architecture portrayed a nation's characteristics so accurately as did the skyscraper. Competition among that gathering of keen-witted, adventurous people had stimulated their inventive and appreciative qualities, so that they reacted quickly to natural impulses, and with more enthusiasm and speed than would be natural with us, and they were such a mixture of peoples that they were untrammelled by tradition.

The qualities of light had a great effect on architecture. Egypt, for example, with its intense blue sky and dry atmosphere, had deep black shadows, hence its architecture had no heavy projecting mouldings, but consisted of large flat surfaces with plain rounded columns, which were scratched to tell a story but not to form decoration. Everything in mass was big, bold and simple. In Greece and Rome the brilliant Mediterranean sunlight, with a damp atmosphere, produced glorious colours in the shadows—oranges, lavenders and purples; hence, those people fluted their columns, and ornamented their deep cornices to gain great richness out of the parts in shade.

As we travelled north into Europe's Gothic belt (France, Germany and England) we encountered grey days when the sun was often absent. What happened? Men cut beautiful forms on their walls with tracery windows, built vertical projecting flying buttresses and pinnacles, which added charm and gave delight irrespective of the weather. Horizontal projections were not attempted as shadow beauty was so uncertain.

Speaking of North America, the lecturer said that the light was peculiarly white and the shadows were uninteresting, and that applied generally over the continent. If we were to investigate what happened in Mexico Eucatan (where, in fact, lived the Mayans, perhaps the most intelligent aborigines the world had had) we found it evolved an architecture amidst high vegetation that was aspiring, and towered to the sky. They had no cornices but simple surface decorations, but they strongly ornamented the angles of their buildings and pyramids for a silhouette as shadows had so little value.

By a process of natural evolution, the light had caused the skyscraper also to come to similar treatment of flat surfaces, set-backs and ornamented silhouettes against the sky. That law of light was apparent in architecture throughout the world, and held, except where it had been deliberately altered by some outside influence.

Man having a finite mind, created a living architecture under a finite inspiration. The Chinese, Persians, Egyptians, and Hindus produced their finest works as temples or shrines to visible deities. Greece and Rome built their masterpieces as settings to gods they worshipped, and of whom they had a representation before them. The great Gothic age, which produced the wonderful cathedrals, was another example, for those buildings were literally shrines to symbolical statues representing saints, the intermediaries between a man and his god. But what happened at the Reformation and since? Old forms were revived, but new ones were not created. Very beautiful and intensely delightful combinations were worked out, but the new, the result of inspiration, was not evident. If one examined the Hebrews, perhaps the most close-knit race in the world, it was found that they were denied a graven image, and had produced no appropriate example of their own architecture. But America had again provided the visible inspiration; she worshipped success. Every successful family or corporation constructed a mighty building and named it after itself. The designer was inspired to do something new as a fitting background to his inspiration. Skyscrapers had resulted.

Such builders were not unconnected with America's advertising capabilities. These huge buildings stood for 365 days and now, with flood-lighting, 365 nights each year announcing the success of their owners. They induced the growing child to be ambitious and undoubtedly had stood as an inspiration for much of the "go-ahead" character the United States possessed.

Magnolia Petroleum Building, Dallas, Texas.

MR. A. C. BOSSOM, F.R.I.B.A., Architect.

What was a skyscraper? It was a building of many stories, one piled on the other. Such had existed in other countries, but those of America were different and had grown to their colossal size as the result of three conditions: the steel frame, the wire rope, and a new form of foundation.

The history of the steel frame dated from 1884, when an architect named Buffinger, of Minneapolis, applied for a patent for a steel frame construction building, 28-stories high. By 1888 that was granted, but such was human eccentricity that he was still practising in Minneapolis, but had never designed a skyscraper which had been built. Then came Robling, the engineer who invented the wire rope, and the great designer of the Brooklyn Bridge. With that, the electric elevator was possible, and without it a fifty-story skyscraper would have been practically impossible.

Lastly, Francis H. Kimball, the architect, in the latter part of the last century, introduced into the construction of the Casino Theatre building on 39th Street and Broadway, New York, a caisson foundation which formerly had only been used for bridge piers in the beds of rivers. Since the establishment of these three elements just forty years ago, the entire American skyscraper development had taken place. During those forty years there had been more wealth expended on skyscrapers in the United States than was spent in the entire four centuries of the great Gothic era of Europe. Never had such a building development occurred in the world's history.

It is amusing to look back and see what existed before 1888. Architecture then was not what might be called an exclusive profession, as "Architect and Coalmerchant," "Undertaker and Architect," "Architect and Carpenter" were the signs on many of the boards that were hung up by the men who wished to design buildings. New York was often given the credit of starting the skyscraper activity, but actually Chicago urged the development at first, although due to its mud foundation, Chicago's method of construction consisted of creating a great concrete raft or platform, and then erecting the building upon it. These entire structures often sank a foot into the ground on completion. New York later started the caissons principle, digging to a rock foundation, and that made the later tremendous height possible

The introduction of the steel frame almost turned building materials into living substances. In the past, the weight of a heavy roof or beam had been supported by a thick wall or a flying buttress, which balanced a weight from above by a mass of masonry below. But the steel frame did not do this; it provided slender supports as near 20-ft. apart as practicable, steel stanchions which continued from basement to roof, and then tied these together at each floor level by girders. It formed a skeleton upon which the building hung. In fact, the skyscraper approached as near to a living entity as a man-made object reasonably could, and the nearer it got to that ideal, the better skyscraper it became. Its foundations or caissons were like great toes that burrowed into the ground to hold it firm. On these stood the steel columns or stanchions tied together with girders forming a skeleton. The joints allowed for wind force and strain by means of gusset-pieces and stay rods (wind bracing as it was called), which performed the functions of the human muscles. The skin was formed with a thin layer of brick, stone, marble or metal, thinner in the case of a 40-story building than for a 3-story building in

England. The top was crowned with its decorative silhouette against the sky, which formed a head. It had nerves—electric wires and telephones circulating to every room and almost every part of each room. It had arteries that pumped hot and cold water to every room and veins or waste-pipes that carried that away. Its heating system was similar to the human blood circulation. It had lungs in the form of a ventilating system that changed the air through these vast structures by the minute; its engine-room was a heart and brain combined, which gave its life-giving qualities to the building by forcing its elevators up and down, and it was capable of repair to its parts without destruction of the whole.

It was interesting to answer a very common criticism that it was not known how long steel buildings would last. That, obviously, was true, but we did know they would not collapse any more than one poor stone in a wall would bring about the destruction of a building.

In the early days those buildings were appropriately criticised; every one really was an experiment, but the U.S.A. was similar to a virile young man of vast strength, initiative, and wealth, possessed with the abounding desire to do something that had not been done before. That spirit was infectious; and architects were not unaffected; it was an era of experimentation, and from it came much that could be turned to the world's benefit. Everything was so quick, so recent, that those terrible eye-sores that were constructed first, still stood like sore thumbs in a landscape, although they were slowly being eliminated.

Troubles were slowly overcome. Men like Sullivan, of Chicago, started to form buildings on new lines, attempting to give a great sense of strength, but the movement did not gather force though the desire for tall buildings grew. At first an owner was content with the tallest building in his town, then it was the highest in the State, later in the United States, with the result that the era of mammoth building leapt forward.

First the Singer building held the palm as the tallest in the world; next up shot the great white marble Metropolitan Tower on Madison Square, designed by the brothers le Brun, but this did not hold the record for long, for Woolworth instructed his architect, Mr. Gilbert, to overtop it, and this—the world-famous Woolworth building—was really the first one that embodied the real principles of verticality in design. Although Gilbert borrowed his detail from the Gothic times, he put it on a structure or skeleton that told its story truthfully. It was a steel-framed building and looked it. That building held the record for many years, but at the present the lecturer thought the Bok building in Cleveland, an 81-story structure, held the record, although the 100-odd story Harmon building in the centre of New York had already, or soon would, lead the field.

The few architects who were designing those early buildings all knew each other, and watched with a most intense interest what each other was doing—not with the idea of copying, for every building was a new adventure, but seeing what they could learn from one another, and how they could improve on each other's efforts and constructional methods. It was interesting to look back on how little real jealousy there was, how the older men and the younger men discussed and helped each other. The romance of how each came to be entrusted with his first big building was a story that he hoped, said the lecturer, would be a most creditable commentary on the architects of that new country. He believed that the story of the sporting spirit in which those young men helped each other to get along, and how each gave out freely all the results of his own investigating, would be a revelation.

(To be concluded.)

A PARIS CONCERT HALL

Though the French capital has well-renowned "concerts" such as the Concert Colonne, the Concert Lanoureux, etc., up to quite recently there was no building especially designed where perfect performances of this kind could take place. The Chatelet or the Trocadero are quite unsuitable, and the Salle Gaveau or even the Opera were designed at a period when the science of acoustics was still in its infancy. The New Salle Pleyel is a building unique in the world as it has been conceived by a scientist and a musician; the shapes, volumes, and type of construction, and even the materials used were determined by a scientist having the architect under his control. Monsieur Gustave Lyon, the creater of this paradise for musicians, is an engineer who studied at the Ecole Polytechnique, the highest school for mathematics in France, and also at the Ecole des Mines (school for mining engineers). In spite of this fact, for forty years he has been a director of the famous firm of musical instrument makers, Pleyel.

In order to understand the design of this building one must have in mind certain principles in acoustics as established by Sabine and others, and which Monsieur Lyon has investigated on different lines for some time past. Sound waves are transmitted through the air by the vibration of solid or liquid bodies at a speed of 1,025 feet per second, approximately. The farther from its original source the larger the sound wave becomes. The increase is proportionate to the square of the distance, but at the same time its energy diminishes in a reversed proportion. A sound wave produced by the human voice, with no special factors to strengthen it, would not carry farther than 34 feet.

In a room with a speaker in the centre a sound wave strikes the four walls as well as the ceiling and floor, thus creating a reverberation which strengthens the sound, provided this reinforcement of sound through a too long period of reverberation does not become an echo. If the difference of time between the original sound wave and the reflected one does not exceed 1-15th of a second, there is perfect acoustics; if it exceeds that period of time there is echo, which produces confusion of sound. Therefore the object of the designer of the Salle Pleyel was to avoid unnecessary reverberation by the design of correct shapes and use of sound-absorbing materials in the auditorium and also by the correct design of the stage or platform where musicians and choirs stand. It has been found that the greatest dimensions of a platform must not exceed 70 ft., with the greatest depth 35 ft., in order to avoid a reflected sound after a lapse of 1-15th of a second.

The main concert hall in the Pleyel building has a total length of approximately 156 ft., the width being 92 ft., with a seating capacity of 3,000. The shape of this hall has been designed in such a way as to avoid unnecessary reverberation, and the stage is designed as a huge sounding board reflecting the sound towards the auditorium and the two galleries. For that reason the organ has been placed in the ceiling of the stage. Under the main auditorium there are two smaller concert halls, which are absolutely sound-proof and isolated from the upper hall, the floor of the latter being quite independent constructionally from the ceilings of the two small halls. There are 58 small studios in addition to cloakrooms, vestries, and different services. All rooms are absolutely sound-proof, each having an inner sound-proof wall, completely independent of the walls forming the divisions.

These light inner walls rest on wooden floors which have no contact with the concrete slab floors, there being a void filled with cotton wool. Other constructional precautions have been taken in order to avoid transmission of sound through the concrete beams or supports used in the building. The main auditorium can be reduced in size by means of curtains worked from the ceiling; thus in case of a reduced audience the sound-absorbing qualities of the auditorium would not be lost. The heating of the whole building is by hot-water radiators for the smaller rooms and hot air for the larger ones.

The architect for the building was Monsieur Auburtin, and at his death MM. Granet and Mathon completed the work. The exterior is very simple, well expressing the medium of construction. There are no unnecessary decorations, but a skin fabric covering the concrete. The interior is simplicity itself, the whole decorative effect being obtained from the method of lighting. The main hall is gilded throughout, and decoration has been spared to the utmost (there being only one frieze, by Jaulmes), in order not to distract the attention of the audience while a concert is in progress.

The Lodge, Bedfont House, Walton-on-Thames.
Messrs. A. Purcell Lay, A.R.I.B.A., and Will Kidd, Architects.

THE LONDON SOCIETY

SOME FEATURES OF UNDERGROUND LONDON

Mr. Harley H. Dalrymple-Hay, M.Inst. C.E., read a lecture on this subject before the London Society at the Royal Society of Arts' premises, Adelphi, W.C.1, on Friday last. Mr. Frank Pick was in the chair.

The lecturer said there were some fifty miles of double line of passenger tube railways, 6½ miles of tube railways for the transmission of His Majesty's mails, 400 miles of main sewers, to say nothing of the much larger mileage of smaller sewers which connect with them, a large number of pipe subways under the main thoroughfares, and an untold mileage of gas, water, hydraulic and other mains, electric and telephone cables, together forming a huge network of underground construction, occupying a zone of underground London extending from a few feet below the surface to a depth of 50 ft. or so.

The original underground railways forming the circle lines were in the most part constructed at comparatively shallow depths below the surface, by what was known as the "cut and cover system," which meant, first excavating the ground, then building the structure within it, and lastly covering it in so as to make the surface good again. That system necessitated the purchase of private property and the removal of buildings all along the route. It further involved the very considerable cost of diverting sewers, water mains, gas mains and other public utility services where encountered. Its one great advantage, however, was that the platforms being placed at comparatively shallow depths, could be approached by ordinary stairs from the street level, instead of necessitating the use of lifts or escalators, as was the case where the railway was placed at a greater depth. The cost of these early lines exceeded £1,000,000 per mile, and would now be much greater, so that the system financially was incapable of general extension.

An alternative method to the cut and cover system had therefore to be devised, said the lecturer, and proceeded to refer to the origin of the shield system of tube railway construction and the manner in which it had been developed. There were, he said, two methods by which all underground works were carried on, namely, (1) by hand mining, and (2) by the use of a special apparatus called a shield.

The history of tunnelling by means of a shield dates from the year 1823, when Mark Isambard Brunel, a Frenchman by birth, who subsequently became a citizen of the United States by choice, but died an English knight, commenced the construction of a tunnel between Rotherhithe and Wapping under the River Thames.

The novelty of Brunel's idea consisted in providing a cell or casing to be forced forward in advance of the tunnel so as to protect the crown and sides of the excavation, and thus was invented what he termed a Brunel "shield." The Thames Tunnel was built of brickwork, and consists of two tunnels side by side. It took 17 years to build, and after enormous difficulties had been overcome, was completed in 1840. The East London Railway Company purchased the tunnel from the Thames Tunnel Company in 1865.

The next step came in the year 1862, when Mr. Peter Barlow, an engineer and Professor of Mathematics at the Military Academy at Woolwich, was engaged in sinking the cast-iron cylinders of the Lambeth Suspension Bridge, near the Houses of Parliament. Barlow found that there was no special difficulty in sinking the cylinders through the river bed, which at that point consisted almost entirely of London blue clay. It accordingly occurred to him that it would be possible, by suitable means, to construct a cast-iron horizontal cylinder, built up in small sections, or in other words, a tunnel for a railway in a like position. He took out a patent for his idea, and wrote a pamphlet, in the year 1867, describing a system of omnibus subways, to be formed of cast-iron tunnels, 8 ft. in diameter, in which the traffic would be carried underground in metal omnibuses, each capable of seating 12 persons. The omnibuses were to be propelled by man power, aided by gravity, without stations, in the ordinary sense, the passengers paying in the omnibuses. The stopping places were to be at one level, and to provide for the differences of the surface level in the more elevated districts, it was proposed to have three series of subways at different levels, the carriages, as well as the passengers being lifted in passing from one to another. The first instalment of the system was realised in the construction of the small tunnel named the Tower Subway, driven under the Thames near the famous fortress.

Owing, however, to the difficulties encountered in the construction of Brunel's Thames Tunnel, already referred to, Barlow could not get any responsible contractor to undertake to do the work, and it was at this juncture that Barlow's assistant, the late Mr. J. H. Greathead, whose name is so well known in connection with the beginnings of the London Tube Railways, came forward, and although by profession an engineer, and not a contractor, Greathead said to Barlow that he would be willing to take a contract for the work and construct the tunnel, which he did for the sum of £10,000. Greathead applied himself with such energy that he completed his contract within the year 1869. The maximum speed obtained was about 9 ft. per day. The tunnel was wholly in the London blue clay, and the men worked the usual three 8-hour shifts.

Following upon the construction of the Tower subway, which Greathead had so successfully completed, an Act of Parliament was obtained in 1884 authorising the construction of the City of London and Southwark Subways in two separate cast-iron, shield-driven tunnels between King William Street, City, and the Elephant and Castle at Newington, Greathead being the engineer. This railway—in which for the first time electric locomotives were used—was opened to the public on December 18, 1890, under the name of the City and South London Railway. On the opening of the first section of that railway it was realised that Greathead's method could be applied at comparatively small cost to the construction of deep level tube lines, placed in the thick stratum of clay which underlies the greater part of London. The year 1892 accordingly witnessed the first of a number of independent schemes for tubes, and in 1893 the following were authorised:—Central London Railway, Shepherd's Bush to Bank, 6.1 miles; Waterloo and City Railway, 1½ miles; Great Northern and City Railway, Finsbury Park to Moorgate Street, 3 miles; City and South London Extension to Islington, 3 miles; Charing Cross to Hampstead, 5 miles; and Baker Street to Waterloo, 3 miles.

Gradients.

The lecturer then referred briefly to a peculiar feature in connection with the London tubes, and one which tended to economy in the cost of operation, namely the method of grading the tubes, so that between the stations there might be a dip or depression, each station being as it were on a summit.

In most of the tube lines, particularly in the case of the Central London Railway, which was more or less level throughout, that principle had been observed where practicable. The section of tube railway which had the steepest gradients against the load of any in London was the Bakerloo line, between Kilburn Park and Queen's Park Stations, where there was a gradient of 1 in 48 for a distance of about 2,000 feet, to enable the trains to come out into the open at the latter station.

Tunnelling.

A number of different methods of tunnelling were necessary under various parts of London, each depending on the nature of the ground met with. For instance, although the bulk of the tunnelling had been executed in the London clay, water-bearing gravels, and sands were encountered at certain parts of the railway, each of which required special treatment.

Where the tunnels were in the London clay, the Greathead shield had generally been employed, but another type of machine, called a rotary shield, had in certain parts of the work been used, with the idea of employing fewer men, and by mechanical means executing the work more rapidly than with the Greathead machine. When constructing short lengths of tunnel the work had invariably been done without the use of a shield, by the ordinary methods of hand mining. The Greathead system of tunnelling in the clay consisted of using a shield and driving a heading by hand labour in front of it, and utilising for the purposes of excavation the hydraulic power by which the shield was propelled, so that in advancing it caused the face of the excavation to be broken down by the interposition of a series of short timber piles placed between the shield and the ground, the material so dislodged being removed by hand labour after the shield had come to rest. Owing to the extremely limited space in front of the shield, namely, about 15 inches, it was not possible for more than one, or at most two miners to work at one time. Consequently, to get space for more men to work, a timber heading was always driven forward with the work, while the shield, as it advanced, shortened the heading at its rear end. The maximum speed of advance was generally about 10 feet a day of 24 hours in the case of the small tunnels between the stations. The large station tunnels, which were also built with shields of special design, were generally constructed at a speed of about 6 feet a day. The iron segments of the small tunnels were lifted by hand and bolted together in position, but in the case of the large station tunnels, owing to the greater weight of the castings forming the rings of the tunnel, hydraulic erectors were fixed to the shield and used to lift and put in position the segments forming a ring of iron. A shield was about 1½ in. larger all round than the outside of the steel tunnel and overlapped its forward portion. There was, therefore, an annular space about 1½ in. wide all round the tunnel after the shield had moved forward, which was filled in with grout.

The lecturer then gave some account of how tunnels were made under the most difficult conditions, namely through water-bearing strata consisting of gravels and sands.

Under these conditions compressed air was used, primarily to exclude water, which would otherwise enter the works and have to be removed by continuous pumping, as Brunel did when he made the Thames Tunnel, the employment of compressed air as an aid to underground mining operations and shaft sinking being first made possible by the invention of the air-lock.

Cutting River Tunnel.

The lecturer then described some of the operations carried out in planning fresh tunnels through areas which were occupied. A very interesting piece of work which he had carried out under the river was in connection with the extension of the Hampstead Tube from Charing Cross to Kennington, where the extension line had to cut through the old loop line round which the Hampstead line trains were operating, which was under the River Thames itself. The level of the loop tunnel was such that the extension line could not either go above or below it, as the gradient in either case would have been excessive, and it had,

therefore, to be cut through. The lecturer said he felt that here at least he was up against a very difficult surgical operation. The thing had to be done, and with the greatest care. Eventually, the portion of the loop line, after the trains had been stopped, was filled in solidly with concrete and brickwork before any mining work was attempted, the brick and concrete filling being designed to act as a safety plug, should the river by any mischance break into the workings while the tunnel was actually being cut through. In the first place, when the shield with which the tunnel under the river itself was constructed between the Surrey shore and the site of the loop tunnel had reached the latter point, the shield was stopped and hand-mining in advance of it was proceeded with in very short lengths, and an iron-lined tunnel of slightly larger diameter than the shield was constructed in such a position, ring by ring, by cutting through the filled-in loop tunnel as to form a continuous eye through the site of the loop. When the eye had been so formed the shield was run through it and work restarted under normal conditions. A similar method of dealing with the oblique junction of the north-bound line with the loop was successfully carried out. It might be of interest, said the lecturer, to mention that the Royal Commission on Cross River Traffic had selected the site of this latter tunnel as a foundation for one of the piers of the proposed double-decker bridge at Charing Cross. He thought, however, that when they came to look further into the problem they might perhaps decide to find another position for the bridge.

Dealing with the new Piccadilly station, the lecturer said that the new booking-hall was immediately below the Circus, and was, broadly speaking, elliptical in shape, and comprised a central portion where the passimeters (or ticket booths) and the approach to the escalators were placed. Outside this area was a wide circulating corridor running round, the wall enclosing it being lined with illuminated showcases. From this corridor would be a wide subway, also lined with illuminated showcases leading by two stairways to the pavements at Swan and Edgar's corner. Narrow subways (8 ft. wide) connect the circulating area with the pavements at the County Fire Office and the London Pavilion corner, and a 12-ft. wide subway would connect with the London Electric Railway Company's existing Piccadilly Station entrance adjoining the Criterion. At the top of Lower Regent-street, on each pavement, there would also be stairways leading by a subway to circulating area and booking-hall.

In conclusion, said the lecturer, it might be of interest to know that when these works were completed, practically 30 per cent. of the volume of ground enclosed between the building frontages of the Circus down to Tube railway level would have been excavated and removed.

The lecturer then gave some description —also illustrated with slides—of the Post Office (London) railway, whose 6½ miles of railway running from Shepherd's Bush to Whitechapel, via the Marble Arch, Wigmore-street, Mount Pleasant and St. Martins-le-Grand was recently opened for mail traffic. This was commenced in 1914.

Mr. Frank Pick, the chairman, in proposing a vote of thanks to the lecturer, said it was not realised how much activity was going on under London. Underground engineers were carrying out works which would be acclaimed by future generations as surpassing in wonder any of the marvels of the past. The engineers themselves found great pleasure in seeing their theoretical calculations proved right in actuality, and he instanced the new station at Piccadilly, where, when Mr. Dalrymple-Hay came to put the very last steel tunnel ring in position it fitted exactly.

A hearty vote of thanks closed the meeting.

LEGAL SECTION

NOTES ON CURRENT CASES

Calculation of Compensation. Children's Allowance.

The first case relating to the calculation of the children's allowance under the Workmen's Compensation Act, 1925, has come before the Court of Appeal in the case Green *v.* Premier Glynrhonwy Slate Company, Ltd. (1928 1 K.B. 561), and the Court found considerable difficulty in interpreting the Statute. The children's allowance was introduced in the Act of 1823, and in our articles on that Act we prophesied that the provisions would give trouble in practice (see our article of March 5, 1926).

The facts of the case are simple. A workman employed by the respondents met with an accident in February, 1927, which resulted in his death on February 3. He left surviving him his widow wholly dependent and two children, one a stepson, under 15 also wholly dependent, and a stepdaughter aged 16 partially dependent, and the question was how was the compensation to be calculated. The County Court Judge had awarded a lump sum to begin with under Section 8 (2) (i), and then had calculated the children's allowance under Section 8 (3) (ii), which made his award £458 5s., on the ground that as one of the children was only partially dependent that made it compulsory to resort to Rule (ii) in place of Rule (i), but it was contended that the calculation should have been made under Rule (i), in which case the compensation would be £488 5s., and the Court of Appeal adopted this view and allowed the appeal. The Court found the legislation extremely complicated, and we fear we must set out the material portions of the section to enable the decision to be understood.

Section 8, subsection (1) provides: "The compensation under this Act where death results from injury shall be a lump sum of an amount calculated in accordance with the rules hereinafter contained" (we need not here trouble with the calculation of this lump sum) "together with, if the workman leaves a widow or other member of his family (not being a child under the age of 15) wholly or partially dependent on his earnings, and in addition leaves one or more children under the age of 15 so dependent, an additional sum (hereinafter referred to as the children's allowance) of an amount calculated in accordance with the rules hereinafter contained . . ." it being then provided that the two sums shall not, taken together, exceed £600. It was pointed out that this subsection indicates two categories of persons, viz. (1) a widow or another member of the family not under the age of 15 and (2) children under the age of 15.

The amount of the children's allowance is fixed by subsection (3), Rules (i) and (ii). Rule 5 (i) is: "If both the widow or other member of the workman's family and such child or children as aforesaid were all wholly dependent on the workman's earnings," then the compensation as regards the children's allowance is computed by a fixed mathematical computation, but Rule (ii) provides: "If the widow or other member of the workman's family and such child or children as aforesaid or any of them were partially dependent on the workman's earnings, the children's allowance shall be such proportion of the sum which would have been payable under the foregoing rule if all such persons had been wholly dependent as may be agreed upon, or in default of agreement as may, taking into consideration the amount of the lump sum, be determined by arbitration under this Act to be reasonable."

The construction the Court of Appeal put upon these provisions was that under section 8, subsection (1) if there is one person in the first category, i.e., a widow or another dependent over 15 that brings in the lump sum, and similarly if there is a widow and children under 15 or in the alternative a dependent over 15 and children under 15, whether the children's allowance is to be calculated under Rule (i) or Rule (ii) will depend upon whether the widow or the dependent over 15 was or not wholly dependent or partially dependent.

Thus the Court held that in this case as there was a widow wholly dependent with two children wholly dependent those being the persons necessary to qualify under Rule (i), the presence of another person over the age of 15 and only partially dependent did not prevent the case falling under Rule (i). It is to be noticed that Rule (i) speaks of the widow or other member of the family and the child or children being "all wholly dependent," whereas Rule (ii) speaks of the widow or other member of the family and the child or children "or any of them" being partially dependent, and Lord Justice Sargeant read the words "or any of them" as applying to one class only of the qualifying persons being partially dependent.

The Court found the Rules extremely difficult to interpret and Lord Justice Scrutton recognised that the interpretation placed upon the section and Rules by the Court might lead to difficulties as, for instance, if the widow were partially dependent but another member of the family (not a child under 15) was wholly dependent. It seems regrettable when the consolidating Act was introduced that such difficulties in drafting could not be avoided.

Ancillary Rights for Working Mines.

We may very briefly draw attention to a decision of the Court of Appeal in the case Tilmanstone (Kent) Collieries, Ltd., on appeal from a decision of the Railway and Canal Commission. The Company, who were lessees of coal at Tilmanstone, had applied under the Mines (Working Facilities and Support) Act, 1923, to the Railway and Canal Commission for leave to construct an aerial ropeway seven miles in length by which they could convey their coal to Dover, the nearest port. The ground upon which the application was made was mainly an economic one, as it was alleged that the railway route to Dover over the Southern Railway Company was 11 miles, which involved a cost of 1s. a ton over that which the coal would be conveyed by the aerial ropeway. The Dover Harbour Board and most of the proprietors on the proposed route of the ropeway assented to the proposition, but certain landowners objected, and amongst them the Southern Railway Company, whose interest in land was confined to the fact that the ropeway at one point crossed a branch line of theirs.

For the purpose of Part I of the Mines (Working Facilities, etc.) Act, 1923, "minerals" includes all minerals or substances in or under land obtainable by underground or by surface working, so it is not limited to coal, and by section 1 where there is danger of minerals being left permanently unworked by reason, amongst other things, of their not being capable of being worked without the concurrence of two or more persons, application can be made to the Board of Trade and the matter can be referred to the Railway and Canal Commission (see section 5). By section 1, subsection (2) "working" minerals shall include amongst other things "carrying away" and by section 3, subsection (2) as instances of ancillary rights to be granted "conveyance of minerals" is spoken of.

The contention of the Southern Railway Company was that the Commission had no jurisdiction to make an order and grant an ancillary right which was directed rather to marketing than working and which was sought on economical or commercial reasons

rather than on account of legal or physical difficulties, and it was contended that "carrying away" and "conveyance" was limited to the limits of the lessor's land, or to the first place where the lessee had effective control. The Court of Appeal affirming the decision of the Railway and Canal Commission, declined to put this narrow construction upon the statute and held that economic considerations were not excluded, and that under section 6, which provides that the Commission "if satisfied that the requirements of this Part of the Act are complied with by the applicant and that it is expedient in the national interest that the right applied for should be granted," the order had been properly made.

The appellants laid great stress on the danger of holding the Commission entitled to grant rights which might involve the construction of great lines of railway without the safeguards provided by the Lands Clauses and Railways Clauses Acts, but the Court pointed out that Parliament had granted these powers to an important judicial tribunal, and the exercise of powers by such a tribunal does not require the same safeguards as in the case of powers by private commercial undertakers. It would, however, it appears to us, be a serious matter if the railways, already handicapped by road competition, were confronted with the danger of industrial undertakings for economic reasons seeking to obtain their own lines, but no doubt the Commission would jealously guard all interests. In the case under discussion, if we remember rightly, the creation of this aerial ropeway and the saving of 1s. per ton on transport by the shorter route was alleged to make the difference between closing the mine altogether or being able to continue to work it.

Specific Performance "Special Expenses" Rate.

We may close this article with a very brief reference to a decision of the Court of Appeal in Calder's Yeast Company, Ltd., *v.* Stockdale (1928 1 Ch. 340). The plaintiffs had entered into a contract of sale of certain land and a brewery, and it was a condition of the agreement that the property should be subject to all incidents of tenure, easements and other "outgoings." The defendants delayed completion and claimed compensation under a condition in the contract in respect of a liability which they alleged attached to the property and had not been disclosed. That liability was a rate in respect of sewerage works which had been declared "special expenses" under the Public Health Act, 1875, and levied on the "contributory place." It was held that this special expenses rate was an ordinary "outgoing," not a charge on the property, but similar to any other rate, and one properly to be borne by the purchaser.

It may be noted that the special expenses involved in this case were special expenses under section 229 and 230 of the Public Health Act, 1875, levied in addition to the poor rate, but having the same operation as the poor rate and differing in no way from any other rate levied upon the occupier (see per Lord Justice Atkin) not to be confused with paving expenses which by section 157 are a charge upon the premises even when payable by instalments.

Exhibition of Modern German Architecture.

A small selection of illustrations of modern German architecture will be on view at the Architectural Association, No. 36, Bedford-square, W.C., from Monday, April 30, until May 19. The exhibition will be open free to the public daily from Tuesday, May 1, until May 19, between the hours of 10 a.m. and 6 p.m. (Sundays excepted). This exhibition has been arranged in conjunction with Dr. Werner Hegemann's lecture on "Modern German Architecture" to be given before members of the Architectural Association on the evening of April 30.

SOCIETIES AND INSTITUTIONS

BOARD OF ARCHITECTURAL EDUCATION.

The Victory Scholarship and the Tite Prize.

Final Competitions.

As a result of the preliminary competitions for the Victory Scholarship and the Tite Prize the following have been selected to take part in the final competitions :—

THE VICTORY SCHOLARSHIP.

Mr. T. Murray Ashford (Birmingham School of Architecture and A.A.).
Mr. Harold Bramhill (University of Liverpool).
Mr. J. W. Buchanan (Architectural Assoc.).
Mr. E. G. Gardner (Architectural Assoc.).
Mr. A. B. Grayson (Architectural Assoc.).
Mr. G. I. C. Highet (Architectural Assoc.).
Mr. G. C. Hough (Univ. of Liverpool).
Mr. J. L. Hughes (Univ. of Liverpool).
Mr. Allan Johnson (Leeds College of Art).
Mr. J. T. Lloyd (Univ. of London).
Mr. D. H. McMorran.
Mr. Alec Owen (Univ. of Liverpool).
Mr. E. B. O'Rorke (Architectural Assoc.).
Miss Betty Scott (Architectural Assoc.).
Mr. D. B. Solomon (Univ. of Liverpool).

THE TITE PRIZE.

Mr. C. J. Bartlett (Technical College, Cardiff).
Mr. John Beloe (Architectural Assoc.).
Mr. J. N. Cowin (Univ. of Liverpool).
Mr. W. Crabtree (Univ. of Liverpool).
Mr. S. E. T. Cusdin (Architectural Assoc.).
Mr. H. C. Ellis (Univ. of Liverpool).
Mr. P. G. Freeman (Univ. of Liverpool).
Mr. E. C. Gilham (Univ. of Liverpool).
Mr. Herbert Jackson (School of Architecture, Birmingham).
Mr. S. W. Kelly (Univ. of Liverpool).
Mr. B. Lightfoot (Univ. of Liverpool).
Mr. R. G. Madeley (School of Architecture, Birmingham).
Mr. J. L. Martin (Univ. of Manchester).
Mr. Thomas Mitchell (School of Architecture, Glasgow).
Mr. John V. Nisbet (Architectural Assoc.).
Mr. C. St. C. R. Oakes (Northern Polytechnic).
Mr. P. S. Pelham-Morter (Univ. of Liverpool).
Mr. J. A. Ritchie (Architectural Assoc.).
Mr. Gordon Stephenson (Univ. of Liverpool).
Mr. H. W. Whiteman (School of Architecture, Birmingham).
Mr. Lawrence Wright (Univ. of Liverpool).
Mr. F. R. S. Yorke (School of Architecture, Birmingham).

R.I.B.A.

Following are notes from the minutes of the Council, April 2 :—

The Royal Gold Medal.—The Council were informed that His Majesty the King had approved the award of the Royal Gold Medal to Mr. E. Guy Dawber, A.R.A.

Examinations.—The following results were reported to the Council :—

(A) The Intermediate, Final and Special Examinations, November and December, 1927

	Examined.	Passed.	Relegated.	Passed. Per cent.
Intermediate Examination :—	91	31	60	34
Final Examination :—	44 (and 4 Pt. I. only, and 1 Pt. II. only).	20 (and 3 Pt. I. only, and 1 Pt. II. only).	25	49
Special Examination :—	17 (and 2 Pt. I. only, and 1 Pt. II. only).	7 (and 1 Pt. I. only, and 1 Pt. II. only).	11	45
Special Examination in Design for Former Members of the Society of Architects :—	3	1	2	33⅓
Professional Practice :—	35	30	5	86
	198	95	103	48

(B) Overseas.

(1) The Final Examination, Perth, Western Australia : Examined, 1; relegated, 1; passed, 0.

(2) The Intermediate Examination, Brisbane : Examined, 4; relegated, 1; passed, 3.

(3) The Final Examination, Brisbane : Examined, 1; relegated, 1; passed, 0.

(4) The Intermediate Examination, Cape Town, South Africa : Examined, 7; relegated, 2; passed, 5.

(5) Examination in Professional Practice, McGill University, School of Architecture, Montreal : Examined, 7; relegated, 0; passed, 7.

A Mark of Distinction for Thesis was awarded to Mr. E. W. Chapman.

The R.I.B.A. (Alfred Bossom) Travelling Studentship, 1928.—The programme of study proposed by Mr. P. Cutbush, A.R.I.B.A., (Alfred Bossom) Travelling Student, 1928, was approved.

Competition for a Design for a Garage.—The Board of Architectural Education reported that through the instrumentality of Mr. T. P. Bennett, F.R.I.B.A., and Mr. W. Rootes, of Grosvenor House, Mr. H. S. Horne, of 74, Park-street, W.1, had offered a prize to the R.I.B.A. of £500 for a design for a garage in the West End of London, adjacent to the theatres. The Council gratefully accepted Mr. Horne's generous offer, and it was decided to make the competition open to all architects.

Salaried Members of the R.I.B.A.—A statement of the policy of the A.A.S.T.A. on the subject of salaried members was submitted by Mr. W. H. Hamlyn, representative of the Association on the Council. It was decided to appoint a Special Committee to consider and report on the matter at the earliest opportunity.

Major Harry Barnes.—The President reported that pressure upon his time had made it necesary for Major Harry Barnes to resign the Chairmanship of the Finance and House Committee and his membership of the Premises Committee. The Council passed a cordial vote of thanks to Major Barnes for the valuable work he had done for the Institute on these two Committees. Mr. Arthur Keen has been appointed Chairman of the Finance and House Committee.

Council for the Preservation of Rural England, Thames Valley Branch : Technical Committee.—Mr. Edward Warren, F.R.I.B.A., and Mr. Michael Waterhouse, A.R.I.B.A., were appointed to represent the R.I.B.A. on the Technical Committee set up by the Thames Valley Branch of the C.P.R.E.

The Fellowship.—The Council, by a unanimous vote, elected Mr. John Seeds, of Belfast, to the Fellowship under the powers defined in the Supplemental Charter of 1925.

Membership.—Applications for membership were approved as follows :—As Fellows, 25 applications; as Associates, 49 applications; as Hon. Associate, 1 application.

Studentship.—The following were elected as Students of the R.I.B.A. :—Albert Thompson Ashworth (University of Liverpool); Albert Edward Barnard (Special Exemption); Sidney Edward Thomas Cusdin (Architectural Association); William Hirst (Architectural Association); Richard Alfred Leftwich (University of Cambridge).

Resignation.—The following resignation was accepted with regret :—William Clarkson, L.R.I.B.A.

Applications for Election as Licentiates under Section III (*f*) of the Supplemental Charter of 1925.—Two applications were approved.

Application for Election as Subscriber.—One application was approved.

LEGAL QUESTIONS WE HAVE BEEN ASKED

By W. T. CRESWELL, Barrister-at-Law, L.R.I.B.A., Associate (late Fellow) Surveyors' Institution, etc.

XVII.—WHAT IS "EXTRAORDINARY TRAFFIC"?

This question is of special interest to all concerned in building; for, under Clause 30 of the proposed new form of building contract, the contractor, unless in the contract with the employer he has expressly and specifically undertaken liability for "extraordinary traffic" expenses in the bills of quantities, is no longer responsible to a road authority for claims, actions, proceedings, or costs in respect thereof; the liability is to fall on the employer henceforth. But if the contractor uses vehicles of an improper nature or design, or improperly loads them, he is then liable for such claims, actions, proceedings, or costs. The position which may arise under this clause is said by some to be difficult; and the question has been asked, whether it is the duty of the architect to determine when vehicles are of improper nature or design, or improperly loaded.

A question will no doubt arise, in the first instance, on the initiative of the local authority, the provisions of Section 23 of the Highways and Locomotives (Amendment) Act, 1878, specially deals with the powers of a road authority to *recover* "extraordinary traffic" expenses, in the event of certain happenings, it would appear also that an injunction may be obtained by a local authority to restrain any person from using a traction-engine upon a highway in such manner as to cause a public nuisance. (See Attorney-General *v.* Scott, 1904, 1.K.B., 404.)

Recovery of Expenses.

Section 23 of the Highways and Locomotives (Amendment) Act, 1878, gives power to a road authority, where extraordinary expenses have been incurred by such authority in repairing a highway (whether a main road or not), "by reason of the damage caused by excessive weight passing along the same, or extraordinary traffic thereon," to recover the amount of those expenses from the person *by whose order* the weight, or traffic, has been conducted. This section was amended more particularly as to proceedings for the recovery of expenses, damages, etc., by Section 12 of the Locomotives Act, 1898; and the object of Section 23 is not to *prohibit* extraordinary traffic, but to put the liability for the expense of repairing the damage done to the road by such traffic on the person whose orders have caused it.

The Question is One of Fact.

The question whether traffic is extraordinary or not, is one of fact, and is to be determined by the comparison of the traffic in question with that which is commonly borne on this road. The mere user of the highway by one person more than others, does not constitute "extraordinary traffic," even when his own user has produced damage to the road; the traffic must be actually extraordinary in reference to the use one would expect to be able to make of such a road, and not merely large in comparison with the traffic which has hitherto been put on it by other persons. In Hill and Another *v.* Thomas (1893), 2.QB., 333, C.A., it was held that the expression "extraordinary traffic," in Section 23 of the 1878 Act, above referred to, as distinct from "excessive weight," includes all such continuous or repeated user of the road by a person's vehicles as is *out of the common order* of traffic, and as may be calculated to damage the highway and increase the consequent expenditure on its repair. In the judgment in this case a definition of extraordinary traffic was given as being "a carriage of articles over the road, at either one or more times, which is so exceptional in the quality or quantity of articles carried, or in the mode or time of user of the road, as substantially to alter and increase the burden imposed by ordinary traffic on the road, and to cause damage and expense thereby beyond what is common." Therefore, in determining whether traffic is "extraordinary traffic," it is material to consider whether the traffic is such as (having regard to the character of the road) was reasonably to be expected. Heavy traction-engine traffic on a country road, where the like is not ordinarily carried, is counted as "extraordinary traffic"; and in considering this question, no distinction in principle is to be drawn between the conveyance of persons and the conveyance of goods. So, in Abingdon R.D.C. *v.* City of Oxford Electric Tramways, Ltd. (1917), 2 K.B., 318, C.A, it was held that motor-omnibuses run on a country lane to serve the needs of the district was "extraordinary traffic."

Again, if traffic, which, on a particular road, is ordinary traffic, has to be diverted to another road, owing to some obstruction or alteration of the surface of the first road, it does not follow that by reason of such diversion the traffic is to be admitted as ordinary traffic on the road to which it is diverted; it may be adjudged to be "extraordinary traffic." (See Barnsley British Co-operative Society, Ltd. *v.* Worsborough U.D.C. (1916), 1 A.C., 291.)

Carts loaded with timber, and of excessive weight, have been held to constitute "extraordinary traffic"; and in Henry Butt and Co., Ltd. *v.* Weston-super-Mare U.D.C. (1922), 1 A.C., 340, extraordinary expense incurred by the authority in repairing damage done, was held to be due to the excess of weight above the average weight of similar goods generally carried in the neighbourhood on other roads similar to the road in question, or to be analogous to what was considered "extraordinary traffic" in comparison with that on neighbouring roads.

Traffic may be "extraordinary traffic" by reason of the *mode* in which it is conducted. In Mayor, etc., of Wolverhampton *v.* Salop C.C.C. (1895), 64 J.L.M.C. 179, it appeared that for 16 years prior to 1893 the appellants had carted coal every weekday over a main road between a railway siding and the pumping station at their waterworks, a distance of about a mile and a quarter. In 1893-1894 they adopted a plan of sending a string of four or five carts at a time in charge of two or three drivers; the average number of journeys every week-day being five each way. These carts followed each other, tandem, in the same track. They were drawn by one-horse apiece, and the individual loads were not excessive. About 7,855 tons of coal were carted during the year. It was held that this was "extraordinary traffic." The mode of user of the road was new and tended substantially to alter and increase the burden expected to be imposed by ordinary traffic.

Amount of Expenses Recoverable.

In Down C.C. *v.* Stewart, C.A. (1927), N.1, 49, it was held that it is not the total sum actually spent on repair that is recoverable by the road authority, whether that repair involves reconstruction or not. Regard must be had to all the circumstances of the case; the state of the roads when the extraordinary traffic commenced; its general character and suitability for the traffic reasonably to be expected thereon; the amount of ordinary traffic, whether of the person concerned or other persons; and the extent and nature of the repairs reasonably required to put the road in *status quo* only, so that deductions should be made if a damaged road, when repaired, is in a better condition than before the "extraordinary traffic" commenced to damage it.

WEEK IN PARLIAMENT

Westminster, *Wednesday.*

Houses Built.

Mr. Chamberlain informed Mrs. Runciman that at the end of February, 1927, 102,864 houses were under construction, and a further 126,611 had been authorised, but not started, in connection with subsidy schemes, under the Housing Acts of 1923 and 1924. The corresponding numbers at the end of February, 1928, were 51,306 and 93,186 respectively. The total numbers of houses authorised under the two Acts at the dates above-mentioned were 546,776 and 647,402 respectively.

London Housing.

Mr. Chamberlain informed Mr. Day that the number of houses completed with State assistance under the Housing Acts in the London Area (approximately the Metropolitan Police District) between January 1, 1919, and March 1, 1928, was 95,014. The number of such houses under construction at the latter date was 11,199. In addition, 39,069 houses were completed between October 1, 1922, and September 30, 1927, without State assistance. Some 68,000 houses had been completed in the London area during the past five years.

The Petroleum Bill.

The Petroleum (Amendment) Bill, which, among other things, enables local authorities to make by-laws with regard to ugly petrol filling stations, has been read a third time in the House of Commons.

Building Societies.

Mr. Brown asked the Minister of Health if he would state the number of local authorities, to the latest available date, who were taking advantage of the Act of 1923 to co-operate with building societies in the provision of houses.

Mr. Chamberlain said he presumed that the hon. member had in mind the power given to local authorities to guarantee the repayment of any advances, with interest thereon, made by building and other societies. Up to September 30 last, the latest date for which complete information was available, 84 local authorities had given such guarantee.

Sir W. Joynson-Hicks informed Mr. Brown that the number of societies under the Building Societies Acts was:—

England and Wales	...		966
Scotland	...	...	82
Total	...	...	1,048

Empire Timber.

Captain Crookshank asked the Secretary of State for Dominion Affairs whether his attention had been called to the exhibition of Empire timber, now showing at the Imperial Institute; and, if so, whether he had taken any and, if so, what steps to bring it to the notice of traders generally in this country.

Mr. H. Williams, who replied, said that all trade associations likely to be interested in this exhibition had been circularised, as well as a number of other bodies, including architects' associations and technical schools. Many of these bodies had already sent representatives to visit the exhibition, and others were to follow.

Dunkery Beacon.

Miss Bondfield asked the Under-Secretary of State for the Home Department, as representing the First Commissioner of Works, if he was aware that Dunkery Beacon was in the market; and whether, in view of the danger that this historic spot might be lost to the people, he would have it scheduled as an ancient monument.

Sir V. Henderson said that the First Commissioner had seen a notice in the Press regarding Dunkery Beacon. He was quite

prepared to schedule the monuments in question, but regretted that no funds were available for their purchase by the State.

The Unemployed.

Mr. Betterton informed Mr. Day that the following table showed the number of insured persons in the area of Greater London classified as belonging to the building trades recorded as unemployed in March, 1926, 1927, and 1928 respectively :—

Occupations.	Mar. 22, 1926.	Mar. 21, 1927.	Mar. 26, 1928. *
Carpenters	602	735	815
Bricklayers	130	266	278
Masons	73	150	94
Slaters	40	49	62
Plasterers	32	122	241
Painters	2,886	3,668	1,979
Plumbers	358	426	345
Labourers to above	4,937	6,316	5,005
All other occupations	3,463	3,518	3,982
Total : Building	12,521	15,250	12,801

* Exclusive of persons aged 65 years and upwards.

In reply to Mr. Brown Mr. Betterton said that the following was the number of insured persons in Scotland classified as belonging to the building trades recorded as unemployed :—

	March 23, 1925.			March 22, 1926.			March 21, 1927.			March 26, 1928 *		
	Wholly unemployed.	Temporarily stopped.	Total.	Wholly unemployed.	Temporarily stopped.	Total.	Wholly unemployed.	Temporarily stopped.	Total.	Wholly unemployed.	Temporarily stopped.	Total.
Carpenters	Not available	Not available	315	920	29	949	681	30	711	1,023	26	1,049
Bricklayers			88	158	11	169	106	6	112	126	14	140
Masons			275	473	12	485	516	15	531	421	35	456
Slaters			95	125	7	132	29	3	32	110	6	116
Plasterers			29	27	4	31	48	1	49	86	6	92
Painters			565	790	12	811	743	9	752	719	4	723
Plumbers			260	351	7	358	443	12	455	436	20	456
Labourers to above			2,195	2,215	56	2,271	2,026	37	2,063	2,215	82	2,297
All other occupations			2,695	2,691	47	2,738	2,203	52	2,255	2,431	52	2,483
Total Building	—	—	6,517	7,759	185	7,944	6,795	165	6,960	7,567	245	7,812

* Exclusive of persons aged 65 years and upwards.

Mr. Betterton informed Mr. Wellock that the number of insured persons in Great Britain classified as belonging to the building trades recorded as unemployed was 87,964 at March 26, 1928, as compared with 71,823 at March 21, 1927.

Rates of Wages.

Mr. Wellock asked what fluctuations in the wages of building workers had taken place since January, 1926.

Mr. Betterton said that the only general change in rates of wages since January, 1926, was a reduction of ½d. per hour, in February, 1928, under an agreement of the National Joint Council for the Building Industry. Certain towns, however, had been up-graded at various dates under the grading schemes of the Council, with consequent increases in wages. In some areas also there had been fluctuations in the rate of wages of plasterers.

MEETINGS

SATURDAY, *April* 28.

Edinburgh Architectural Association. Visit to Lanarkshire's New Schools.

Institution of Municipal and County Engineers. Meeting of the West Midland District. At Stafford. 11 a.m.

MONDAY, *April* 30.

Architectural Association. Dr. Werner Hegemann on "Modern German Architecture" 7 p.m.

Royal Society of Arts. Mr. A. G. Huntley on "Applied Architectural Acoustics." 8 p.m.

Liverpool Architectural Society. Annual General Meeting. At Bluecoat Chambers, School-lane. 5.30 p.m.

TUESDAY, *May* 1.

Incorporated Association of Architects and Surveyors. Mr. C. I. Haden on "Electric Heating its Application to Buildings." 7 p.m.

WEDNESDAY, *May* 2.

Royal Society of Arts. Mr. William Taylor on "Standardisation of the Elements of Scientific Apparatus, with special reference to Teaching." 8 p.m.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

***May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or, better still, in typewriting?*—ED.**

Summer Working Hours.

SIR,—We should be obliged if you would state what is the official date in the building trade when the summer working hours (46½) commence and if it is a fact that the official 46½ hours working time began on January 21, 1928, or if it could be considered in order to work 46½ hours from that date if found to be necessary without applying for permisison to the joint associations.

READERS (WATFORD).

[According to the rules of the National Joint Council for the Building Industry, summer working hours of 46½ apply "during the period of summer time as determined by Statute," and therefore in the present year began on Monday last. It is not, therefore, a fact that the official 46½ hours working time commenced from January 21, 1928, and it follows that it could not be considered to be in order to work 46½ hours from that date if found to be necessary without applying for permission to the joint associations. It should be noted that in London, by agreement, 44 hours are worked all the year round, and therefore the question of a different set of hours for summer time does not arise. It is understood that Watford is subject to the same rules as the London district.—ED.]

Invitation to Tender.

SIR,—In response to an advertisement in one of the provincial daily newspapers we submitted a tender for excavations (water main), the closing date for which was advertised as the 10th instant. Upon looking over the site on the 9th instant, we found that the work was started about four days previous to that date, the contract, in fact, having been let locally. It seems to us that, having incurred expense over work that it was not possible for any of the firms tendering to obtain, we have some legal redress in the case of the expenses, and perhaps estimated profits.

READERS.

[An advertisement to tender is an "invitation to treat"—an offer to negotiate, or an offer to receive offers. Until a tender is accepted there can be no question of a contract being formed; and the inviter is not liable, in general, for any expense a contractor has been put to, whatever those expenses may be, in preparing the tender.

The instance quoted in the question, it is thought, does not often occur in practice; but it is certainly a hardship, which the inquirer has not alone suffered, and which should be stopped.

There is, however, no remedy easy of application; in that, as before stated, there is no contract formed upon which to sue. Though, in some cases, an action for deceit might lie when a false statement is made causing damage, in this instance the difficulties of proving what is required to support such an action are so great that it would not be worth while to carry the matter further (see Chap. II, Creswell on Building Contracts).—ED.]

"Dook."

[REPLY TO "SASSENACH," APRIL 20.]

SIR,—Messrs. Rivington, in their "Notes on Building Construction," give the term "Dook" as the Scots name for the familiar "wood-brick" used for fixing woodwork. An architectural dictionary in my possession gives the word as "wall-dock," and describes it as "a piece of wood the size of a brick, built into the wall at the necessary heights, to which jamb lining, battening, and similar work is to be fastened."

SOUTHRON.

SIR,—A "dook" is a wooden plug, let into a masonry wall, to provide means for attaching the carpentry work thereto.

W. LENNOX COATS.

Metal Architraves.

SIR,—Some time ago you printed a series of articles by Mr. F. E. Bennett, A.R.I.B.A., on "Flats, etc., in New York," showing various details of their construction, including, if I remember rightly, the use of metal architraves to the doors. I should be pleased if you could inform me as to the surface finish of the metal and how these architraves take paint, etc. I have been told that it is very difficult to imitate wood on metal, and further, that the paint has a tendency to chip off with a slight blow.

STUDENT.

[The articles referred to appeared in our issues covering the period January 14 to April 29, 1927.—ED.]

Defects in House.

SIR,—I bought a new house from a builder which was ready for occupation last November, and have since lived in it. I now find that rain penetrates the roof, possibly through the cemented joints of the tiles, but cannot say when this first commenced. For what period, if any, after the date of purchase is the builder liable for defects of this nature, and any others, should they arise?

W. A. S.

Cornish House-building.

SIR,—Could you inform me what is at present the most common form of walling used in Cornwall for small houses, such as those built in housing schemes? If granite, because of the locality, is cheaper than brick, what thickness of wall is usually adopted?

V. C. L. SAUNDERS.

Weather Finish.

[REPLY TO "PROOF-IT," APRIL 20.]

SIR,—The method suggested should be quite satisfactory, provided a good brand of waterproofing material is used, and also a good brand of white cement. Most brands of waterproofing have a colourless variety, which should be asked for.

QUALITY.

Water Main.

[REPLY TO "RATEPAYER," APRIL 20.]

SIR,—Your correspondent does not state the district or authority, but he probably does not want very close figures. In the home counties a good average cost would be 5s. per yard run, all in.

COSTS.

Absorbent Paper Towels.

[REPLY TO "REGULAR READER," APRIL 20.]

SIR,—I should advise your correspondent to make inquiries at any of the great London stores, who are as likely as any to be able to supply this rather unusual order.

LONDON.

THE BUILDING TRADE

EVERYDAY SCIENCE FOR ARCHITECTS AND BUILDERS—XVI

By A. M. GILES, B.Sc., A.I.Struct.E., A.M.I.E.E.

Lighting.

In this section an endeavour will be made to say something about lighting in all its branches; not only the fitting of electric, gas, or even oil lamps for lighting, which really is the province of the lighting engineer, but also such items as direct and indirect lighting, basement and pavement lighting, measurement of lighting, and, in general, just how the principles involved are applied in the methods of inside and outside lighting of buildings.

For a very long time the applications of the principles of heat have been known and dealt with, but only comparatively recently, and by the comparative few, have the applications of the laws of light and the principles of lighting been brought forward and introduced into the scheme of knowledge recognised as useful to architects and builders. Up to a certain time the advocates of simple and effective methods of applying the well-known principles of lighting were referred to as "cranks," and their experimental knowledge was considered of minor importance. Nowadays, however, it is becoming generally recognised that the "cranks," with their experimental knowledge of the elementary principles of lighting, are helping to surmount many of the difficulties which confront the architect and builder. Also, it is believed that before very long the consideration of at least the fundamental and essential lighting principles will be included in the curriculum of the training of the aspiring architect, builder, surveyor, decorator, etc.

After all, it is only because of lighting, either natural or artificial, that architecture really exists; the building may be there all right, but to the art of the architect lighting is fundamental. At the Royal Institute of British Architects only two or three years ago Mr. Percy J. Waldram remarked that "The architect might be said to be primarily a craftsman who worked in light and illumination as a material."

The æsthetic side of architecture is more involved in the question of illumination or lighting than would appear at first sight. The colour scheme suggested by the architect, and adopted by the decorator, or the mixture of pigments, or the fusion of colours is very much a question which depends upon the principles of light. The "trial and error" method, which for so long held away in many branches of the building trade, is gradually being displaced by more exact methods for obtaining required results, and there is no doubt but that these are being extended to lighting and illumination.

In addition to the æsthetic characteristics of architecture, which undoubtedly have produced and are still producing many charming and wonderful pictures, there is the practical side of lighting which must engage the attention and skill of both the architect and the builder, *e.g.*, the situation and size of window so as to give the required intensity of illumination at specified positions in room, office, hall, or church.

It may be thought even now, by some, that we are not sufficiently advanced to take advantage of all the principles of lighting and illumination that are known to the expert, but it cannot be too strongly emphasised that there are certain fundamental applications of this very important branch of science which can be used and appreciated by everyone in the most elementary conditions that very often obtain in the various branches of the building trade or profession. Let us now consider a few points upon which a knowledge of the principles of this subject may be both useful and helpful.

General Lighting.

The lighting of our streets and houses by artificial means is usually left to the lighting engineer. Many of us, however, are concerned with the measurement of this lighting or illumination. We must know and understand the units that are employed so that we can make comparisons and satisfy ourselves that we are getting the amount of illumination necessary in any particular place and for any particular object.

Natural illumination, *i.e.*, whether directly or indirectly from the sun, is of paramount importance to the architect or builder, for the appearance of his building is very much affected by its position and aspect. The illumination of the interior of the building is also very much his business, since he should consider whether the size and position of the windows will give him the necessary measurable intensity of illumination where required.

Luminosity.

The sun is a natural self-luminous body, *i.e.*, it, of itself, gives forth light. The moon is not self-luminous. The light that it sheds upon the earth is reflected light from the sun. We get an eclipse of the moon when the earth gets in the way and prevents the sun's light reaching it. No one can say that a piece of white blotting-paper is self-luminous. Yet it is luminous, in the sense that it reflects light, for Mr. W. E. Sumpner, many years ago, showed that it would reflect 82 per cent. of the light that falls upon it. Naturally in a darkened room it will not be visible because there is no light falling upon it. An electric light bulb, an incandescent gas mantle, a red-hot coal, a candle, etc., all are self-luminous bodies.

Illuminating Power.

A luminous body has illuminating power which is a measurable quantity. An incandescent gas mantle has a greater illuminating power than an ordinary candle. This is easily observed by the eye, but it is by no means easy for the eye to say how many times the illuminating power of the mantle is greater than that of the candle. As a measuring instrument of illuminating power or intensity of illumination the eye is most inefficient. To tell by the eye alone how many times the illuminating power of one source of light is greater or less than that of another is pure guesswork.

The unit of illuminating power is one-candle power. It is the amount of light given out by a standard candle, and is an arbitrary unit. Much time was spent and many experiments were carried out to decide upon this unit. It is enough for us to know that this still remains the unit, though it would be quite a fluke if a candle manufactured to a very careful specification actually had this unit of illuminating power. Methods of measuring the power of a source of light will be considered in a later article.

Intensity of Illumination.

The looseness with which certain terms are used often leads to a great deal of confusion. This expression, intensity of illumination, is sometimes used by some people when they really mean illuminating power. The two expressions are quite distinct. The one refers to the source of light, and is the illuminating power; the other refers to the surface upon which the light falls, and is the intensity of illumination. This latter, again, is not measurable by the eye alone. It depends upon the square of its distance from the source of light. It is one application of the well-known inverse square law, *i.e.*, the intensity of illumination of a surface varies inversely as the square of its distance from the source of light. For example, the intensity of illumination of the surface of a drawing board, at a distance of 2 ft. from a source of light is one quarter of what it would be were it but 1 ft. from the source of light. Nowadays we talk about the intensity of illumination of any surface as being so many *foot-candles*. The intensity of illumination of a surface is 1 foot-candle when it is distant 1 ft. from a candle, and it will still have only 1 foot-candle intensity of illumination if it be 2 ft. from a 4 candle power source of light. However, more of this later.

Shadows.

"Light and shade" is an expression that is often used by architects as well as artists. Shade or shadow is produced when an opaque object is placed in between the source of light and the surface it would illuminate. That the outline of the shadow is the same as that of the opaque object points to the fact that light travels in straight lines. Text-books, one after the other, express this fact in what is, to a great many people, a very worrying expression, viz.: "the rectilinear propagation of light."

Shadows are very often said to be intense, and it is almost self-evident that the stronger the light the deeper is the shadow. The eye is unable to compare shadows with any degree of exactness, but it is able to say very accurately when two shadows are equally intense, and, in point of fact, it is by an adaptation of this that one is able to measure both the illuminating power of a source of light and the intensity of illumination of a surface.

Concentrated and Diffused Light.

There are many occasions on which it is required to obtain a concentrated beam of light at a particular place. Only during the recent Easter holiday the writer came across an instance when visiting the Cheddar caves. The guide may not have understood the principles involved, but he certainly knew how to obtain a concentrated light where required. Many other examples will come to mind, such as the lighting of basements, or cellars, or shops at the bottom of a tall block of buildings where the street is narrow, or even the rooms that look out upon the well of a large block of buildings.

The two laws involved are those of reflection and refraction of light. Concentrated beams of light are produced by reflection at plane or curved surfaces, or by refraction through lenses and prisms. In the use of prisms for indirect lighting, a case comes to mind where, not very many miles from London, the prisms had been incorrectly fixed.

Diffused lighting is a form of indirect lighting which depends upon irregular reflection at uneven or "matted" surfaces, such as white paint or white paper. No rays of light reach the eye directly from the source. It is a very pleasant and appealing form of lighting. The space seems to be more or less filled with light which comes from no direct source. Drawing offices and the rooms of many private houses are lighted in this way. Also, one could hardly fail to notice the diffused lighting of the escalator galleries at some of the stations on the Underground Railway. Absence of shadows is one thing that will strike the observer, who, as he stands upon the steps going up or down, wonders what it is that is different.

Kaleidoscope.

This instrument is a great friend to the pattern maker. It is a very simple piece of apparatus with a long name. By the very easiest of adjustments it can be made to

present an almost infinite number of different symmetrical patterns and colour schemes. Its principle is based upon the law of reflection of light, and a more explanatory description of it will follow later.

Colour.

Light as we know it is technically called white light. It falls upon the various objects in a room, yet these do not all appear white. There may be many different coloured objects in the room. If the room were darkened one would not see them at all, so that it is only because of the white light falling upon them that they become visible. If the white light falls upon a piece of white paper it looks white, yet if it falls upon a red tablecloth, the cloth looks red. Just why a material or a paint may look one colour in daylight and possess quite a different shade of colour in artificial light is a phenomenon the explanation of which, later, may be helpful.

In the course of the next two or three articles it is hoped to make clear by simple explanations and easy experiments the above problems, as well as many others which are based upon the principles of light.

THE BUILDING EXHIBITION

We give some concluding notes on the Building Exhibition, which finished at Olympia on Thursday. Undoubtedly the most successful of the series, the Exhibition—well-arranged and exclusively a *Building* Exhibition—has been of the greatest service to merchant and buyer, besides creating interest in the layman. An Exhibition such as this is of the very greatest assistance in furthering the interests and welfare of the Building Industry, and the promoters are worthy of the most sincere congratulations on their achievement.

L.M.B.A. Function.

Of the many pleasant functions held at the Exhibition none was more successful than that of the London Master Builders' Association, which took place on Friday last. The President of the Association, Mr. R. L. Roberts, received the members and their guests, of whom there was an excellent attendance, and a most enjoyable afternoon was spent.

A Distinctive Brick Display.

We illustrate this week the brick-built pavilion forming the stand of the Sussex Brick Co., Ltd., at the Building Exhibition at Olympia this week, which provides actual examples of the many kinds of bricks produced by this well-known Horsham firm. It is an artistic structure, and displays to advantage the Southwater engineering

A Stand at the Building Exhibition.

bricks in pure red and multi-colours, as well as a great variety of the firm's hand-made sand-faced bricks in various colours. The Southwater engineering bricks combine an exceptionally satisfactory multi-colour effect with non-porosity and a crushing strain of 509 tons per square foot. The Sussex Brick Co.'s hand-made sand-faced flared reds of coarse texture vary in actual colour from dark purple to red. Another attractive range is that of the Sussex stocks. These sand-faced bricks vary in colour from grey and brown to purple, and, when mingled, blend into a very pleasing mellow tone and texture.

A Trade Luncheon.

The Governor and the Directors of the Gas, Light and Coke Company gave a luncheon at Horseferry-road, S.W.1, on April 19, previous to a visit of inspection to the Company's exhibits at the Building Exhibition at Olympia. The Deputy-Governor, Mr. Henry Woodall, M.Inst.C.E., in the course of a speech proposing "Health and Prosperity to the Building Trades," said that not the least of the economies that the builder would have effected to-day was that secured by the provision of properly designed gas-flues instead of the ordinary 9 in. by 9 in. coal-fire flue. But it was of great importance that the gas flues should be properly designed and constructed from fireplace to terminal; and that was the particular point which the Gas, Light and Coke Exhibit at Olympia had been arranged to make clear and to afford information upon. They had been fortunate enough to obtain the assistance of Mr. Walter Tapper, A.R.A., President of the Royal Institute of British Architects, who had prepared a series of five detailed drawings, embodying suggestions for the satisfactory construction of gas flues. A pamphlet, entitled "Gas-Flue Construction," which embodied reproductions of those drawings and also Mr. Tapper's written suggestions for the planning and construction of gas flues had been produced for reference. The speaker wished to take the opportunity of uttering a necessary warning against manufacturers of geysers who informed builders and others, by advertisement or otherwise, that because of some special arrangement in their apparatus it was quite unnecessary to provide a baffle and flue to ventilate the machine. They were naturally able to claim that this provided a direct saving over the geyser fitted with proper ventilating arrangements. Any such claims or suggestions were strongly to be deprecated. Every geyser must consume a considerable amount of gas in a short time, and was generally fitted in a relatively small bathroom. For those reasons it was absolutely imperative that a properly constructed baffle and flue, having a direct and efficient outlet into the open air, should be fitted in every case.

He had pleasure in proposing health and prosperity to the Building Trades, and in coupling with the toast the names of Mr. R. L. Roberts, Mr. A. H. Adamson, and Mr. F. L. Dove, all of whom briefly replied.

Gas-flue Construction.

The series of drawings on this subject by Mr. Walter J. Tapper, A.R.A., P.R.I.B.A., and published by the Gas, Light and Coke Company at Horseferry-road, S.W.1, is one that will be of great interest to architects and builders. Drawings 1, 2 and 3 show alternative methods of constructing flues for six gas fires and two coal fires in the party wall of a pair of semi-detached houses. In each case special economy flue-blocks are used in the formation of the flues for the gas fires up to a point above first-floor ceiling level. From there upwards, the constructional methods are varied. Drawing No. 4 shows an angle fireplace in a small bedroom on the first floor of a house; while drawing No. 5 shows a method of dealing with the flues of gas fires fixed on partition walls which do not centre with the line of the main ridge.

A Correction.

In the notice of the stand of Messrs. Scaffolding (Great Britain), Ltd., at the Building Exhibition, given on page 645 of our issue for April 13, we regret that owing to a misprint the word "belt" has been used instead of "bolt." The paragraph in question should read: "The screw plate is placed in position behind the lugs on the coupler band, and the bolt is then screwed as tightly as possible with the bar, or podger supplied."

INSTITUTE OF CLAYWORKERS' ANNUAL DINNER

The annual dinner of the Institute of Clayworkers was held at Pagani's Restaurant, Great Portland Street, London, W.1, on Wednesday evening, April 18, Mr. A. H. Stephenson, the President, presiding over a gathering of about 200. Amongst those present were the following:—Mr. Walter Tapper, A.R.A., P.R.I.B.A., Mr. Fred Thorne, J.P., President, National Federation of Building Trades' Employers; Mr. P. M. Stewart, J.P., President, National Federation of Clay Industries; Mr. H. J. C. Johnston, ex-President, Institute of Clayworkers; Mr. E. G. Vevers, ex-President, Institute of Clayworkers; Mr. W. H. Wright, Mr. E. J. Lawrence, Mr. W. T. Plume, and Mr. H. Greville Montgomery.

After the usual loyal toast had been honoured, Mr. Walter Tapper, proposing the toast of "The Clayworking Industry," said they knew better than he could tell them how architects were dependent upon the clayworkers' efforts to provide them with really good and sound material. No matter how good the design might be, or how good the architect might be, the qualities of a building were improved by having a good brick wall made of bricks of the right size, shape and texture, and also a good tiled roof. In certain districts, it seemed impossible, or very difficult, at least, to obtain a really good facing brick. That he found to be the case in the Midlands, and more especially in the North of England. Then again, it was a very curious thing that right up to the 18th century it was apparently possible to obtain a good facing brick. He suggested that the clayworkers should give a little attention to that point, as he felt sure if they did, it would be all the better for architecture. Another thing he desired to know was why there were so many ugly bricks made. There was another material which he would like to mention, and that was terra cotta. Terra cotta, as they all knew very well, was used mainly at one time as a sort of ornament, such, for instance, as they saw in the great medallions at Hampton Court Palace. It was never used as a building material in the olden days as it was used to-day. Then, it had a very great value, and that was how terra-cotta should be used to-day. At Olympia there was a fine collection of glazed earthenware, and he wished the great commercial firms would go in for such things and make them in bulk. Then he came to what was really now a lost art in this country, and that was, the art of reproducing that great mediæval art tile of the 11th, 12th and 13th centuries, examples of which they saw to-day in Westminster Abbey. Why was it they never saw such a beautiful tile as that produced to-day? They had had men like William de Morgan, and men of that calibre, but they were the only men who had ever tried to bring back such a wonderful and beautiful art. All those minor arts the gentlemen present ought to be able to produce, and should produce.

The President, responding, said Mr. Tapper had stated that there were no good bricks in the Midlands, and in the North of England. He could assure Mr. Tapper that some of the best brindle bricks in the world were made in the neighbourhood of Birmingham, bricks that should rejoice the heart of the modern architect. Continuing, the speaker said it had been his pleasure to take a trip round South America, and he went inland and visited some of the ruins of the ancient Inca cities, which dated back as far as 1,000 B.C. There he had seen bricks which were made of mud and straw, the ornamentation of which was in a perfect state of preservation. They certainly could not emulate that in England, but what was the explanation? Bricks in the ancient Inca cities had lasted throughout all those ages because it never rained there. In this country bricks had to be hard or they would perish almost directly, because of the rain they were subjected to from time to time.

Mr. H. J. C. Johnston, proposing the toast of "The Visitors," said one of the difficulties of generalising in the clay industry was that if they spoke on behalf of the materials they made they were in a somewhat difficult position because sometimes they had to ask architects to give their blessing to something which was new. The new forms of brickwork, terra-cotta and other materials made by the clay industries were well deserving of the architect's attention.

Mr. Fred Thorne, responding, said the Institute of Clayworkers must be very thankful that they did not have to deal with wages or with conditions of labour. Neither had they, except in a tentative fashion, to deal with contracts except with the builders. Concluding, the speaker said he did not know how they produced their presidents, but they had got a wonderful one in Mr. Stephenson.

Mr. E. G. Vevers, proposing the toast of "The President," said Mr. Stephenson probably knew more about the ins and outs of the trade than anyone present. He (the speaker) was, he believed, correct in saying that the president had been articled to his profession as far back as 1876, when it could hardly be looked upon as a profession, and he was also, he thought, present when that Institute was originally started. Their president was a very keen supporter of the Institute, and he was confident that they could not have chosen any one more fitted for the position that Mr. Stephenson held.

The President's health was then toasted with musical honours.

The Chairman briefly replied.

BUILDERS' CLERKS' BENEVOLENT INSTITUTION

The forty-eighth annual dinner of this Institution was held on Tuesday last at the Holborn Restaurant, the President (Mr. A. B. H. Colls) in the chair.

The loyal toasts having been honoured, the Chairman proposed the health of the Builders' Clerks' Benevolent Institution. He said that when asked to act as President of the Institution for the ensuing year, he had gladly done so for two reasons. The first was that he considered it to be the duty of any master builder, when he had the opportunity, to take his turn in doing his best in helping such an Institution. A second reason was that he had a family interest in the Institution. It was rather a noteworthy fact that his grandfather had occupied the chair in 1876, his father in 1883, and an uncle in 1893. This year he had the honour to follow in their footsteps, and his son was present, perhaps himself to be President on a future occasion. With regard to the Institution itself, thanks to the efforts of many past Presidents, its financial position was very much better than it had been. But the fact remained that, whereas pensions and administration expenses came to £900 a year, the Institution's income from annual subscriptions and interest on investments was not much over £600. It was the aim of the President every year to make up the balance, and, if possible, put a few hundreds to reserve fund, and he hoped later in the evening the Secretary would announce that this had been done. He must say a word about the Committee; he had never known a keener body of men, and was sure that the Institution's affairs were safe in their hands.

Mr. Percy C. Culver, who proposed "The Architects and Surveyors," said for nearly half a century the Institution had been carrying on its work, and its members were grateful to architects and surveyors for the interest they had shown in it and for their increasing donations in support of the work it was doing.

Mr. John Theobald, responding to the toast, said that to extend a helping hand to friends who had fallen by the way through no fault of their own was a great work. He wished the Institution increasing success and prosperity.

"The Builders and Builders' Merchants" was proposed by Mr. S. H. F. Pulley (Hon. Treasurer), who took the occasion to give some statistics of the work done by the Institution. It had given, he said, £24,222 in pensions, and £1,047 in temporary assistance, besides presentations to the Orphans' Working School, which the President had already mentioned, so that the total sum dispensed by the Institution since its inauguration now amounted to £26,056. Of its pensioners, 59 had passed away and there were 21 still on the books. The pensions contributed to longevity, the oldest one now living had been on the books 46 years and the next oldest 35 years. Recipients of pensions were not penalised for their own thrift. One person was allowed to have an income of £75, and husband and wife living together £100. The Institution paid towards this up to £40 in the case of an individual, and in the case of a husband and wife £50. In addition to the pensions the Institution made small grants. He took the opportunity presented by proposing this toast to give this information, because but for builders and builders' merchants the Institution would have had no abiding corporate existence. He thanked them in the name of the Institution, of its committee and its pensioners.

Mr. R. L. Roberts, who replied, said that unity and co-operation were usually the theme of a good many speeches on such occasions as this. He wished that unity and co-operation would be translated into actual fact, and that builders and builders' merchants should unite for the common interests of the trade.

The health of the President was proposed by Mr. F. D. Huntington, and toasted with enthusiasm, and the President's reply concluded the speechmaking for the evening.

During the evening the Secretary (Mr. John Austin) announced that a total sum had been received of £888 12s. He added that he was sure further amounts would come in, and he hoped for a total running into four figures.

NEW BUILDINGS IN LONDON

The Editor would be glad to receive information for publication under this heading from architects, builders, or other persons concerned.

Acton.—Building.—Acton Town Garage and Service Station propose to build a large petrol-filling and service station on a site near the Underground station. The architect is Mr. G. Percy Pratt, J.P., 174, High-street, W.3.

Burnt Ash-hill.—Church.—Mr. H. G. Holt, A.R.I.B.A., of 46, Victoria-street, has prepared plans for the erection of a church on a site of the west side of Burnt Ash-hill, S.W.

Chelsea.—Housing.—The plans submitted by the Chelsea Borough Council to the Ministry of Health for a re-housing scheme at World's End, S.W., have been approved.

Croydon.—Houses.—Plans have been prepared by the Borough Engineer for the erection of 64 houses on the Hermitage-road estate, Upper Norwood, and 90 houses on the Mitcham-road estate.

Elephant and Castle.—Modernisation.—The plans for the modernisation of the Elephant and Castle Theatre in New Kent-road, S.E.1, referred to in the issue of *The Builder* for April 13, have been prepared by Messrs. Sprague and Barton, 60, Haymarket, S.W.1.

Essex-street.—Building.—An office building, of six stories is being erected by Messrs. F. and H. F. Higgs, Ltd., Station Works, Hinton-road, Herne Hill, S.E., to the designs of Messrs. Lewis Soloman and Sons, 21, Hart-street, Bloomsbury, W.C. Demolition and excavation is by Messrs. Westminster Wharfage Co., Ltd.; steelwork by Messrs. Archibald D. Dawnay and Sons, Ltd.; and fireproof floors by Messrs. Diespeker and Co., Ltd.

Hackney.—Baths.—The Hackney Borough Council has agreed to the proposals of the London County Council for the establishment of an open-air swimming bath on Hackney Downs.

Hackney.—Exchange.—The Triangular Construction Co. are to build a post office and telephone exchange on the northern side of Paragon-road, abutting on Valette-street, for H.M.O.W. The plans have been prepared by H.M.O.W. Architects' Dept.

Hackney.—Synagogue.—Mr. G. Coles, F.R.I.B.A., has submitted plans to the Hackney Council for the erection of a synagogue on the south side of Grove-lane, E.

Kensington.—Tenders are being invited by the Kensington Board of Guardians for building work at the receiving room to the west end of the maternity wards at St. Mary Abbots Hospital, Marloes-road.

Kentish Town.—Exchange.—Plans have been prepared by the Architect's Department of H.M. Office of Works for the construction of a post office and telephone exchange at Kentish Town, N.W.

Lambeth.—Dwellings.—Tenders are being invited for the erection of three blocks of dwellings at China-walk area, Lambeth, S.W., to the plans of the London County Council's Chief Architect.

Leicester-square.—Alterations.—The Kit-Cat Restaurants, Ltd., 20-21, Leicester-square, W.1, propose to carry out extensive structural alterations to the "Cafe Anglais" restaurant.

Long Acre.—Studio.—A studio is being erected at 134/5, Long Acre, W.C.2. Messrs. H. Morrell & Sons are the builders; Mr. E. A. Shaw, P.A.S.I., is the architect; whilst Messrs. Young & Co., 6, Queen Anne's-gate, S.W.1, are responsible for the constructional steelwork.

Marylebone.—Mr. Martin Harvey, builder, Baker-street, W.1, is the head of a syndicate which proposes to carry out a building scheme near Baker-street Station. The proposal is to build blocks of shops and flats at a cost of £1,500,000. The site, about two acres in extent, embraces Marylebone-road, one side of Upper Baker-street, the south side of New-street, the east side of Upper Gloucester-place.

Mill Hill.—Homes.—The Linen and Drapers' Institution and Approved Societies, of Atlantic House, Holborn Viaduct, E.C.1, are to build more homes at Mill Hill, N.W.

Portman-square.—Offices.—The large mansion at the corner of Portman-square and Baker-street, W.1, is to be reconstructed as offices, whilst the mews in Baker-street are to be demolished and two shops with one floor of offices erected in place. The builders will be Messrs. W. A. King and Sons (Brixton), Ltd., Melbourne Works, S.W., and the architect is Mr. Gordon Jeeves, F.R.I.B.A., 16, Hanover-square, W.1.

Shoreditch.—Extensions.—A sum of £100,000 is to be spent on extensions to the Queen's Hospital for Children in Hackney-road.

Southampton-row.—Alterations.—Barclays Bank, Ltd., are to carry out extensive structural alterations to their branch at the corner of Southampton-row and Theobald's-road, W.C. The builders are Messrs. Mullen and Lumsden, Ltd., 49, Eagle-street, W.C., and the architects are Messrs. Sheppard and Harris, 38, Bedford-place, W.C.

Strand.—Shops.—Mr. J. J. Joass, F.R.I.B.A., 40, St. James's-place, S.W.1, has designed the large block of buildings, to consist of shops and offices, which is to be erected on the site of 73, 74 and 75, Strand, W.C., at the corner of Adam-street. The building work will be carried out by Messrs. Walter Lawrence and Son, Ltd., 31, Sun-street, E.C.2. This work was first referred to in our issue of February 10.

Wandsworth.—Dwellings.—A further two blocks of dwellings are to be erected at East Hill estate, Wandsworth, S.W., for the London County Council. The plans have been prepared by Mr. G. Topham Forrest, F.R.I.B.A., the Council's Chief Architect.

RATES OF WAGES IN THE BUILDING TRADE

[Every endeavour is made to ensure accuracy but we cannot be responsible for errors.]

	Masons.	Bricklayers.	Carpenters Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers.
Aberdare	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Accrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Alfreton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Alnwick	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Altrincham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ashford Kent	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Ashington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ashton-under-Lyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Aylesbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Aysham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Banbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Barnsley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barnstaple	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Barrow-in-Furness	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Basingstoke	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Bath	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bedford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Berwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bexhill	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Birkenhead	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Birmingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bishop Auckland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackburn	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackpool	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bolton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bournemouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bradford	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bradford-on-Avon	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Braintree	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Brentwood	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bridgwater	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bridlington	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Brighton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bristol	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bromsgrove	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bromyard	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Bungay	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Burnley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Burton-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Buxton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Cambridge	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Canterbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Cardiff	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Carlisle	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chatham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Chelmsford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cheltenham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chesterfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chorley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Cirencester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Clacton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Colchester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Coventry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Cranbrook	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Crewe	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Cromer	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Darlington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Deal	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Denbigh	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Derby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Devizes	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Dewsbury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Doncaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Dorchester	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Dorking	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Dovercourt	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Driffield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Droitwich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Dudley	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Durham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Eastbourne	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
E. Glam. (Mon.Val.)	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ely	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Exeter	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2
Exmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Fakenham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Felixstowe	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Folkestone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Frome	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Glossop	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Gloucester	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Godalming	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Goole	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Gosport	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Grantham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Great Yarmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Grimsby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Guildford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Halifax	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Harpenden	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Harrogate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hartlepools	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Harwich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hastings	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hatfield	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hednesford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Hereford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Herne Bay	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hertford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hitchin	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hoddesdon	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Holt	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Huddersfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hull	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hunstanton	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Huntingdon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Isle of Wight	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Ipswich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Keighley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Kettering	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Kidderminster	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
King's Lynn	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Lancaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Leeds	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leicester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leighton-Buzzard	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Lichfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lincoln	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Littlehampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Liverpool	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Llandudno	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Llanelly	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
London:								
12 m. radius	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/4
12-15 m. radius	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/3½
Loughborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Lowestoft	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Luton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Macclesfield	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Maidstone	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Malvern	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Manchester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Mansfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Margate	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Market Harb'rough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Matlock	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Melton Constable	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Melton Mowbray	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Merthyr Tydfil	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Middlesbrough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newark	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Newbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Newcastle-on-Tyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newcastle-ur-Lyme	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
New Forest	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newmarket	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newport, Mon.	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Norwich	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Nottingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Nuneaton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Oakham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Oldham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Oxford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Paignton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Peterborough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Plymouth	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Pontypridd	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Portsmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Preston	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ramsgate	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Reading	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Redcar	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Redditch	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Reigate	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Retford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Ripon	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Rochdale	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Rochester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Rugby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Saffron Walden	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
St. Albans	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
St. Helens	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Sawbridgeworth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Saxmundham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Scarborough	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Sevenoaks	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Sheffield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Shrewsbury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Sittingbourne	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Southampton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Southend-on-Sea	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
South Shields	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stevenage	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Stockport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stockton-on-Tees	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stoke-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stourbridge	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stourport	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stowmarket	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Stratford-on-Avon	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stroud	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Sunderland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swaffham	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Swansea	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swindon	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Tamworth	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Taunton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Thetford	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Torquay	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Totnes	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4	1/0½
Trowbridge	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Tunbridge Wells	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Uttoxeter	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wakefield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Walsall	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wallsend	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Warminster	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Warrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Warwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wells (Norfolk)	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Welwyn Gar. City	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
West Bromwich	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Weston-sup.-Mare	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Weymouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Whitby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wigan	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Winchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Windsor	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wisbech	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Wolverhampton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Woodbridge	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Worcester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Worksop	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Worthing	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Wrexham	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wroxham	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Wymondham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
York	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½

For rates of wages in the Building Trade in Scotland, see page 755.

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in, the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, ETC.

APRIL 30.

Belfast. — Heating. — Of Mersey-st. public elementary school by accelerated low pressure hot water system, for C.B. Education Architect, Victoria-st. Dep. £1 1s.

Belfast.—Reconstructing.—Taking down and reconstructing of rubble wall and gate piers at the Training College, Stranmillis-rd., for C.B. City S.

Bingley.—Fencing.—Unclimbable iron fencing at Bingley-Crossflatts Council School, for Bingley District Sub-committee. B. Leah, Education Office.

Cardiff.—Alterations.—At hospital of City Lodge Institution, for B.G. Willmott & Smith, architects, 4, Park-pl. Dep. £2 2s.

East Preston.—Cottages.—4 at Clapham and 6 at Ferring, for R.D.C. H. R. Judd, S., 72, South-ter., Littlehampton.

Keighley.—Alterations.—In connection with proposed alterations and extensions to lavatory accommodation to two main pavilions at Sanatorium, Morton Banks, for Keighley and Bingley Joint Hospital Board. F. Atkinson, L.R.I.B.A., architect, Old Bank-chambers, Bingley.

Maretimo.—Painting.—Of iron railings and iron footbridge, at Maretimo, Blackrock, Co. Dublin, for Gt. Southern Rlys. Chief Engineer, Broadstone Station. Dep. £1 1s.

Port St. Mary (Isle of Man).—Houses.—Six workmen's dwellings, for Port St. Mary Village Commissioners. G. Kay and Sons, architects, 22, Athol-st., Douglas

Southend-on-Sea. — Pavilion. — Erection of, between the bowling greens on the Chalkwell-esplanade, for the C.B. Robt. H. Dyer, B.E., Municipal-buildings. Dep. £2.

Southend-on-Sea.—Windows.—Additional windows on the tipping floor at the refuse destructor, for the B.C. Robt. H. Dyer, B.E., Municipal-buildings. Dep. £2.

Stepney.—Constructional Steelwork and Reinforced Concrete Work.—Required in proposed bathrooms, external stairs and sun balconies, for the Guardians. S. McClelland, Clerk, Administrative Offices, Bancroft-rd., Mile End, E.1. Dep. £1 1s.

Tilbury.—Houses.—315, including reinforced concrete slab foundations, triangular block system or in brickwork, for the U.D.C. S. A. Hill-Willis, E. and S., Council Offices, Civic-square. Dep. £5.

West Bromwich.—Building.—New fire station, in Paradise-st., for C.B. A. D. Greatorex, B.E. and S.

York.—Foundations.—Building substructure and foundations for new boilers at electricity generating station, Foss Islands-rd., for T.C. F. W. Spurr, City E. Dep. £2 2s.

MAY 1.

Blunts (Cornwall).—Renovation.—Of Wesleyan Chapel, for Trustees. Mr. Martin, "Bearah," near Blunts, Tideford, St. Germans.

Cheadle and Gatley.—Extensions.—To main substation building, for U.D.C. R. W. Willis, Electrical Engineer and Manager, 37, High-st. Dep. £1 1s.

Chingford.—Houses.—20, in pairs, for the U.D.C. G. H. Green, clerk, Council Offices, Station-rd., Chingford, E.4. Dep. £2 2s.

Chipping Norton.—Houses.—6 non-parlour type at Finstock, for R.D.C. A. T. Green, S. Dep. £2 2s.

Deigeley.—Additions.—Also extensive improvements in connection with chapel, for Baptist Chapel Committee. J. E. Griffiths, L.R.I.B.A., Owen Morris Roberts & Son, architects and surveyors, Portmadoc.

Dublin.—Wiring.—For electric lighting and heating of 100 houses in Drumcondra housing scheme, for Corporation. Gerald J. Sherlock, T.C.

Elham.—Repairs.—To boiler house chimney shaft at Institution at Lyminge, for B.G. E. F. Webb, clerk, 29, Bouverie-sq., Folkestone.

Gateshead.—Flats.—28 two-apartment flats at Morrison-st., and 40 two-apartment at Johnson-st., for C.B. B.E. Dep. £2 2s.

Hornsey. — Reconstruction. — Of the superstructure and widening of bridge No. 2, carrying road over railway at Muswell-hill, for the T.C. C. J. Brown, engineer, King's Cross Station, N.1.

Irishtown.—Rectory.—For St. Matthew's Church. Rev. J. S. Carolin, 56, Tritonville-rd., Sandymount. Dep. £2.

Mold.—Painting.—Also decorating at following schools, for Flintshire E.C. R. G. Whitley, C.A. (2) Leeswood N.P., (3) Llanfynydd Council, (4) Northop Hall Council, (5) Soughton Council, (6) Custom House Lane Council (infants'), (7) Mold Junction Council, (8) Pentrobin C.E. R. G. Whitley, C.A. and S.

Oban.—Cottages.—Two roadmen's cottages, one at Coillaig, Kilchrenan, and one near County March, Tyndrum, for Lorn District Committee of Argyll C.C. R. W. Campbell, architect, Columba-buildings.

Rochdale.—Painting.—Interior of four homes for children at Middlewood, Wardle, near Rochdale, for B.G. I. Clegg, Clerk.

Teignmouth.—Houses.—28, on the Mill-lane site, for the U.D.C. F. W. Knight, Dist. S.

MAY 2.

Bourne.—Houses.—Four at Morton, for R.D.C. T. Lake, Surveyor's Office.

Bury.—Houses.—32, upon land adjoining Deal-st., for C.B. J. Ainsworth Settle, B.E. Dep. £2.

Dalkeith.—Roads.—Formation of roads and footpaths and erection of entrance gate, railing, etc., at King's-park, for T.C. B.S. Dep. £1 1s.

Manchester.—School.—Open-air municipal school, Crumpsall, for E.C. P. M. Heath, T.C.

Rochester.—Houses.—6 non-parlour, on Maidstone-rd. housing site, for T.C. W. Law, City S. Dep. £1 1s.

MAY 3.

Ampthill.—Houses.—Four houses at Clophill; four at Flitwick; four at Lower Stondon, Shillington; four at Maulden; four at Westoning; four at Marston, for R.D.C. L. Foster, S., Flitwick, Bedford. Dep. £1 1s.

Bicester.—Conveniences.—Sanitary conveniences, provision of new bathrooms and necessary drainage at Union Workhouse, for B.G. P. T. Davis, Sanitary S., School House, Hethe, Bicester.

Devizes.—Cottages.—Patney, 2 pairs (non-parlour type); Patney, 1 pair (parlour type); Potterne (Silver-st.), 2 pairs (non-parlour type), for R.D.C. T. V. Trumper, Building Surveyor, Maryport-chambers.

Edinburgh.—Adaptations.—Also alterations at 118, George-st., as extension of central telephone exchange, for H.M.O.W. Architect, H.M. Office of Works, 122, George-st., Edinburgh. Dep. £1 1s.

Southampton.—School.—New Council school at Wherwell, for the C.C. of Southampton. A. L. Roberts, C.A., The Castle, Winchester. Dep. £1 1s. by cheque payable to the "Hants County Council" and crossed "Lloyds Bank, Ltd., Winchester"

Southampton.—School.—New Council school at Totton, for the C.C. of Southampton. A. L. Roberts, C.A., The Castle, Winchester. Dep. £1 1s. by cheque payable to the "Hants County Council" and crossed "Lloyds Bank, Ltd., Winchester."

Southampton. — School. — At Cranfield, for Southampton C.C. A. L. Roberts, County Architect, The Castle, Winchester. Dep. £1 1s. by cheque, payable to "Hants County Council" and crossed "Lloyds Bank, Ltd., Winchester."

MAY 4.

Grimsby.—Alterations.—Also underpinning, etc., of walls, for Electricity Committee. J. W. Jackson, T.C., Victoria-st.

Leeds.—Conversion.—Of mental block into a children's block at Institution, Rothwell Haigh, near Leeds, for T.C. J. H. Ford, clerk to the Guardians, 11, South-parade.

Leeds.—Painting.—Outside at block 3 and section 6, etc., at institutions at Beckett-st., for B.G. J. H. Ford, clerk, 11, South-parade.

MAY 5.

Doncaster.—Houses.—200, on Intake site, together with necessary sewerage works and road construction, for C.B. R. E. Ford, Housing S. Dep. £3 3s.

Glasgow.—Jobbing Work.—For Parks Dept. D. Stenhouse, T.C.

Mytholmroyd.—Painting.—Also decorating interior and outside painting of Cragg Vale Wesleyan Chapel. J. Mitchell, 7, Vale-terrace, Cragg-rd.

Northallerton.—Roof.—Over pig pens, for Northallerton Live Stock Mart Co., Ltd. W. L. Prest, secretary, Northallerton Live Stock Mart Co., Ltd.

Oban.—Houses.—28, in Soroba-rd., for T.C. D. Galloway, B.S.

Oldbury.—Houses.—22, at Birchfield-lane, for U.D.C. W. Greenwood, E. and S. Dep. £2 2s.

Staines.—Heating.—Of infirmary at Staines Poor Law Institution, London-rd., Ashford, for B.G. J. Roger Preston, consulting engineer, 7, Southampton-st., Bloomsbury-sq., W.C.1. Dep. £1 1s.

MAY 7.

Batley.—Alterations.—To entrance and new macadam cartway, at Girls' Grammar School, for West Riding E.C. Education Department, County Hall, Wakefield.

Birkenhead.—Building.—New out-patients' department at General Hospital, for Committee. Edmund Kirby & Sons, architects, 5, Cook-st., Liverpool.

Croydon.—Houses.—Erecting of 64 (70 lettings) at Hermitage-rd. estate, Upper Norwood, for the C.B. B.E., Town Hall. Dep. £3 3s.

Croydon.—Houses.—Erection of 90 (98 lettings) at Mitcham-rd. estate, for the C.B. B.E., Town Hall Dep. £3 3s

Ecclesfield.—Fencing.—Unclimbable iron fencing on site for secondary school, for West Riding E.C. Education Department, County Hall, Wakefield.

Guildford.—Reconstruction of Bookers Tower, Guildford Cemetery, for T.C. J. W. Hipwood, B.S.

Leeds.—Foundations.—Excavations for and construction of ferro-concrete raft, foundations and ducts in connection with Kirkstall power station at Redcote Farm, Armley, for T.C. C. N. Hefford, manager, Electricity Dept., 1, Whitehall-rd. Dep. £1.

Lewisham.—Internal painting of the Lewisham Hospital, High-st., Lewisham, S.E.13, for the Lewisham Guardians. Guardians' Offices, 394, High-st. Dep. £3 3s.

Milford Haven.—House.—Electrical power house for U.D.C. A. F. Webb, L.R.I.B.A., & Son, architects, Tredegar-chambers, Blackwood, Mon. Dep. £3 3s.

Norwich.—Repairs and Materials.—For War Dept. Director of Army Contracts, Imperial House, Tothill-st., Westminster, S.W.1.

Wroxall (Isle of Wight).—Buildings, etc.—For new buildings, alterations and repairs at Winstone Farm, for C.C. J. Dufton, County Clerk.

MAY 8.

Ben Rhydding.—Additions.—Also alterations required at Ben Rhydding Council School, for West Riding E.C. Education Department, County Hall, Wakefield.

Glemsford.—Alterations.—At Council school, for West Suffolk E.C. A. Ainsworth Hunt, C.A., 51a, Abbeygate-st., Bury St. Edmund's.

Girvan.—Alterations.—Also adaptations at post office, for H.M.O.W. Architect, H.M. Office of Works, 122, George-st., Edinburgh. Dep. £1 1s.

Leeds.—Painting.—Also Cleaning, at infectious diseases hospital, Seacroft, and tuberculosis sanatorium, Killingbeck, for T.C. T. Thornton, T.C.

London.—Public Baths and Wash-houses.—In Weston-st., Bromley-by-Bow, E., for the Poplar B.C. Harley Heckford, B.S. Dep. £3 3s

Nottingham.—Telephone Exchange.—At Beeston, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

Ospisdale.—Alterations.—Also additions to Ospisdale House, near Dornoch, for Ospisdale Estate, Ltd. Horne & Murray, architects, Golspie.

Swallownest.—Painting.— Internal and decorating South Rotherham and Kiveton-park District Isolation Hospital, for committee. A. H. Styring, Clerk, 6, North Church-st., Sheffield.

West Riding.—Installation.—Providing and fixing a low pressure hot water installation at Hirst Courtney and Temple Hirst New School, for County E.C. Education Department, County Hall, Wakefield.

MAY 9.

Atherstone.—Houses.—70, on Westwood housing site, for R.D.C. H. J. Coleby, E. and S. Dep. £3 3s.

Drumcondra.—Houses.—50, on site of Griffith-av., for Dublin Commercial Public Utility Society, Ltd. McDonnell, Dixon & Downes, architects, 20, Ely-place, Dublin.

Hendon.—Building.—One story building to provide further sanitary accommodation, conversion of a store room into a bathroom, construction of bay window to tramp attendant's quarters, and sundry minor works, for B.G. C. W. Wyles, clerk.

Kirkburton.—Painting.—External, of several buildings at Storthes Hall Mental Hospital, Kirkburton, near Huddersfield, for West Riding Mental Hospitals Board. W. E. H. Burton, Architect and Engineer, Mental Hospital Board Offices, Wakefield.

***London.**—Cleaning, painting and repair works: (1) Mead Works, Fulham; (2) Eastern Ambulance Station, Homerton; (3) Escape Bridge, Tooting Bec., for M.A.B. Office of the Board, Embankment, E.C.4. Dep. £1 in respect of each work

***London and Kent.**—Verandahs: (1) to Eastern Hospital, Homerton-grove, E.9; (2) to Infirmary at White Oak, Swanley, Kent, for the M.A.B. Office of the Board, Victoria Embankment, E.C.4. Dep. £1 in respect of each work.

Northumberland.—Post Office.—At Wallsend, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

Oldham.—Demolition.—Of Brook Mills, in Honeywell-lane, for C.B. B.E. and S.

MAY 10.

Birmingham.—Telephone Exchange.—At Harborne, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

MAY 11.

St. Pancras.—Builders' Work.—Extensions to Highgate Electricity Sub-Station, for the B.C. Electricity Offices, 57, Pratt-street, N.W.1. Dep. £1.

MAY 12.

Aylesbury.—Painting.—External, etc., to 20 cottages at Stoke Mandeville and 4 cottages at Chearsley, for R.D.C. Taylor & White, A.R.I.B.A., architects, 7, Bourbon-st.

Dawdon.—Pavilion.—In recreation grounds, M. R. Balmer, 16, Ilchester-st., Dawdon, Seaham Harbour.

Dorking.—Extensions.—To refuse destructor, for U.D.C. S. S. Gettings, S.

East Rainton.—Homes.—Five aged mine workers' homes at East Rainton, near Houghton-le-Spring. J. Adair, 19, The Avenue, Durham.

Manea.—Redecorating.—Chapel, etc., for trustees of Primitive Methodist Chapel. G. W. Lambert, secretary to Trustees

MAY 14.

St. Pancras. — Superstructure. — For block of dwellings at Ossulston-st., for the L.C.C. Architect to the Council, The County Hall (Room No. 3), Westminster Bridge, S.E.1. Dep. £2.

MAY 15.

Loughborough.—Head Post Office: erection of, at Loughborough, for the Commissioners H.M.O.W. Contracts Branch, King Charles-street, S.W.1. Dep. £1 1s.

MAY 16.

***London.**—Telephone Exchange: at Kentish Town, N.W., for the Commissioners H.M.O.W. Contracts Branch, King Charles-street, S.W.1. Dep. £1 1s.

MAY 19.

***Paddington.**—Constructional and Reinforced Concrete Work.—Improvement, Edgware-road, junction with Harrow-road, and underground conveniences, for the Metro. B.C. B.E. and Surveyor's Office, Town Hall. Dep. £1 1s. to Borough Treasurer

MAY 21.

***London.**—Dwellings.—Erection of, at East Hill estate, Wandsworth, and at China-walk area, Lambeth, for the L.C.C. Architect to the Council, County Hall (Room No. 3), Westminster Bridge, S.E.1. Dep. £2 in respect of each work.

NO DATE.

Bangor.—Church.—At junction of Donaghadee-rd. and Bay Lands estate, for Congregational Church. G. O'Neill, architect, 26, Corn Market, Belfast.

Barnsley.—Painting.—Also decorating, Pitt-st. Wesleyan Church. A. P. Haigh, 2, St. Mary's-place.

Leeds.—Church.—Baptist Church, for Trustees of Harehills-lane Baptist Church. Herbert J. Manchip, architect, 49, Windermere-rd., Muswell Hill, N.10. Dep. £2 2s.

Silloth.—Painting.—Outside of Convalescent Institution for Committee. H. B. Ayris, architect, Carlisle.

MATERIALS, ETC.

APRIL 30.

Dagenham.—Tarspraying.—40,000 galls. (approx.) of tar or other road dressing, for U.D.C. H. E. Lightfoot, E.

Farnham.—Road Materials.—For U.D.C. E. W. Veale, E. and S.

Ireland.—Stone.—700 to 800 tons of heavy rubble stone, for Gt. Southern Rly. John F. Sides, Broadstone Station, Dublin.

Gorcham-by-Sea.—Granite.—For U.D.C. Town Surveyor.

MAY 1.

Cairo.—Asphalt.—For Egyptian Ministry of Public Works. Department of Overseas Trade, 35, Old Queen-st., S.W.1. (B.X. 4263).

Glasgow.—Builders' Materials.—For Tramways Dept. D. Stenhouse, T.C

MAY 2.

Huyton-with-Roby.—Macadam.—For (a) 500 tons 2½-in. graded tarred slag macadam, (b) 100 tons 1½-in. tarred limestone macadam, and (c) 50 tons ¾-in. to ½-in. tarred limestone, and also 300 tons ¾-in clean granite chippings, for U.D.C. H. Finister, S.

Salford.—Lime.—For T.C. City E.

MAY 4.

Skegness.—Road Materials.—For U.D.C. R. H. Jenkins, E. and S.

ENGINEERING, IRON AND STEEL.

APRIL 30.

Edinburgh.—Tank.—Cast-iron tank, for Gas Dept.—H. H. Gracie, engineer and manager, 15, Carlton-hill.

Inverness.—Hydro-electric scheme.—At Bught, for T.C. A. Grant, civil engineer.

MAY 1.

Caherciveen.—Reconstruction.—In reinforced concrete, of Caherciveen Bridge, for Kerry C.C. L. O'Cuinlain, Runaidhe, County Hall, Tralee.

India.—Bridges.—35 road bridges for Lloyd Barrage, for India Store Dept. Director, Belvedere-rd., S.E.1.

London.—Steelwork.—175 tons structural steelwork for Madras and Southern Mahratta Railway Co., Ltd. Director.

Macclesfield.—Alterations.—Also extensions to sewage disposal works, Poynton-with-Worth, for R.D.C. F. Harrison, Deputy Clerk.

MAY 3.

Bridlington.—Driving adits.—At waterworks, for T.C. W. Thompson, Waterworks Engineer, Marton-rd.

MAY 4.

London.—Bridgework.—690 tons, for Indian Store Dept., Director-General, Belvedere-rd., S.E.1.

London.—Steelwork.—For bridges, for South Indian Railway Co., Ltd. Robert White & Partners, consulting engineers, 3, Victoria-st., S.W.1.

Wortley.—Tank.—Reinforced concrete tank at Stannington, for R.D.C. F. Thuriby, E. Dep. £1.

MAY 5.

Lancashire.—Reconstruction.—Also widening of Tawd Bridge, for C.C. W. H. Schofield, County Offices, Preston.

MAY 7.

Portadown.—Steelwork.—For fabrication, delivery and erection of steel framework in connection with reconstruction of Shambles, William-st., for U.D.C. R. Ferguson and S. McIlveen, architects, 36, Scottish Provident-buildings, Belfast.

MAY 8.

Maldon.—Water Supply.—For (1) supply of 1,548 lin. yds. of 3-in., and 1,155 lin. yds. of 4-in. diameter cast-iron pipes; and (2) excavation, laying, jointing of above pipes with other works, for R.D.C. Wm. Almond, E.

MAY 10.

Johannesburg.—Bridge Work.—Structural bridge work for Smith-st. Bridge, Durban; Potgieter-st. Bridge, Pretoria, additional set of stairs, Witbank footbridge, for South African Railways and Harbours. Department of Overseas Trade, 35, Old Queen-st., S.W.1. (Reference A.X. 6145.)

Lochaber.—Reconstruction of bridge over the River Lochy. Sir E. Owen Williams, K.B.E., 5, St. George's-rd., Westminster, S.W.1. Dep. £5 5s.

MAY 11.

Bedford.—Water Supply.—At Bromham, for R.D.C. W. G. Daniels, clerk. Dep. £2 2s.

Belfast.—Steelwork.—Delivery and erection of steelwork at the Law Courts, for the Commissioners of H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

MAY 14.

Carlisle.—Footbridge.—Steel plate girder footbridge, approximately 189 ft. long and 7 ft. wide, over L.M. and S. Rly. near Maryport Cottages, for T.C. Percy Dalton, A.R.I.B.A., City E.

Glasgow.—Bridge.—Over L. and N.E. Rly. (Glasgow and Airdrie Line) at Barrachnie, for T.C. D. A. Donald, engineer, 271, Alexandra-parade. Dep. £3 3s.

MAY 28.

East Grinstead.—Sewerage.—Construction of sewage dispesal works, comprising detritus, settling and storm water standby tanks, filter beds and humus tanks, together with 2 ejector stations, laying of several miles of 15-in., 12-in., 9-in. and 6-in. sewers, and construction of about 230 manholes and other appurtenant works, at Worth, for R.D.C. C. Turton, E. and S., 18, Station-rd. Dep. £5 5s.

ROAD, SEWERAGE, AND WATER WORKS.

APRIL 30.

Barnet.—Making-up.—Of Cedar Lawn-av., for U.D.C. S.

Hendon.—Making-up.—Llanvanor-rd., Armitage-rd., Renters-av., Elliot-rd., Allington-rd., Foscote-rd., Rundell-cres., Alderton-cres., Crespigny-rd. and Graham-rd., for U.D.C. A. O. Knight, E. and S. Dep. £10.

Ealing.—Making-up.—Various roads on Pope's-lane housing estate, for T.C. W. R. Hicks, B.E.

East Preston.—Tarring.—Surface tarring of approximately 120,000 sq. yds. of roads, for R.D.C. S.

Hendon.—Making-up.—Llanvanor-rd., Armitage-rd., Renters-av., Elliot-rd., Allington-rd., Foscote-rd., Rundell-crescent, Alderton-crescent, Crespigny-rd., and Graham-rd., for U.D.C. A. O. Knight, E. and S. Dep. £10.

Hove.—Macadam.—Providing and laying with tarred macadam three portions of playgrounds at Portland-rd. schools for E.C. B.S

Inverurie.—Pavements.—Laying of concrete pavements, for T.C. B.S.

St. Helens.—Making-of.—Certain streets and passages, for T.C. A. W. Bradley, Borough and Water Engineer. Dep. £1 1s.

MAY 1.

Bute.—For (1) resurfacing of Port-Bannatyne-Ettrick Bay-rd. for one mile from top of Kames Brae, and (2) spraying and chipping West-rd. (Barnauld Bridge to Kingarth Hotel), for D.C. D. Arnot, District Clerk, County Office, Rothesay. Dep. £1.

Cardiff.—Tarmacadam.—For R.D.C. W. Farrow, E. and S. Dep. £2 2s.

Carshalton.—Drainage.—Surface water drainage in Beddington-gardens, comprising 12-in. and 15-in. sewers, manholes, etc., for U.D.C. R. A. Hutson, acting surveyor. Dep. £2.

Carshalton.—Making-up.—Of (1) Downside-rd. and (2) Beddington-gardens, for U.D.C. R. A. Hutson, acting surveyor. Dep. £2.

Margate.—Road.—Constructing, sewering and making-up continuation of Northdown-rd., east of Ye Olde Charles Inn; new road to be known as Foreland-av., leading from continuation of Northdown-rd. to Holly-lane. Portion of Dane Valley-rd., from easterly side of "Corona" to westerly boundary of Coporation's housing land, for T.C. B.S.

MAY 2.

Huyton-with-Roby.—Tar-spraying.—Approximately 37,000 sup. yds. of highways, for U.D.C. H. Finister, S.

Laoighis.—Road.—Laying of approximately 6,000 super yards of reinforced concrete roadway in Bridge-st., Main-st. and Market-sq., Portlaoighise (Maryborough), for C.C. C.S., Courthouse, Portlaoighise. Dep. £5.

Marsden.—Making-up.—Approximately 1,650 lin. yds. of kerbing, footpath, asphalting and 9-in. and 6-in. surface water sewers, etc., on Wakefield and Austerlands main road (north side), 550 lin. yds. of 9-in. soil sewer and manholes, etc., on Wakefield and Austerlands main road, for U.D.C. J. Smith, S. Dep. £2 2s.

Stanley.—Repairs—To playgrounds and pointing of premises at Grove Council School, for West Riding E.C. Percy Beaumont, W.R. Education Offices, 8, St. John's North, Wakefield.

Sunderland.—Roads.—Also sewers and water-course at Ford housing estate, for C.B. B.E. Dep. £2 2s.

Welwyn Garden City.—Tarpaving.—23,840 super yards of carriageway and 6,105 super yds. of footways, for U.D.C. W. E. James, S. Dep. £2 2s.

Welwyn Garden City.—Surface dressing roads, for U.D.C. W. E. James, S.

MAY 3.

Coulsdon and Purley.—Maying-up.—Briton Hill-rd., Sanderstead, for U.D.C. G. A. Ballard, S. Dep. £2 2s.

London.—Making-up.—For (a) Water-lane (part), Prince's-rd (part), and St. Mark's-rd.; supply and lay asphalt macadam 2-in. thick (approximate area 9,092 yds. super; and (b) Leigham-vale, supply and lay two-coat asphalt macadam 4-in. thick (approximate area 9,950 yds. super), for Lambeth B.C. O. Catlin, B.E

Surbiton.—Drainage.—Surface water in Corkran-rd., Lovelace-rd., Upper Brighton-rd., Brighton-rd. and Balaclava-rd., for U.D.C. E. and S. Dep. £2 2s.

Surbiton.—Making-up.—Of Ashcombe-av., Southborough-close and Woodlands-rd. (part of), for U.D.C. E. and S. Dep. £2 2s

Swansea.—Making-up.—For (1) Pinewood-rd., from Hawthorn-av. to Llythrid-av.; (2) Beattie-st., Cwmbwrla, for C.B. J. R. Heath, B.E. and S.

MAY 4.

Ballymena.—Resurfacing.—Of portions of Galgorm-rd., 6,700 sq. yds., and Summerhill and Cushendall-rd., 8,500 sq. yds., for U.D.C. H. O'Hara. T.C. Dep. £1.

Bexhill.—Making-up.—Of Arthur-rd. and Eastwood-rd., for T.C. G. Ball, B.S. Dep. £1 1s.

Durham.—Repairs.—Tar paving repairs to yards of schools in Easington district for Durham County E.C. A. Moir, District Clerk, Easington District Education Office, Council School, Haswell, Co. Durham.

East Kerrier.—Surfacing.—Providing and laying bituminous surfacing material and other incidental work in connection with two roads, for R.D.C. R. P. Smith, S., 33, Western-pl., Penryn. Dep. £3 3s.

Southend-on-Sea.—Sewering.—Of Carlton-av., Carlingford-drive, Commercial-rd., Lavender-grove and Westbourne-grove and incidental works, for C.B. R. H. Dyer, B.E. and S. Dep. £1 each.

MAY 5.

Winchester.—Paving.—1,430 sup. yds. soft wood paving with reinforced concrete foundations, for T.C. City S.

MAY 7.

Merton and Morden.—Making-up.—Footpath leading from Erridge-rd. to St. Mary's-rd., work including tarpaving, surface-water drainage, etc., for U.D.C. G. Jerram, E. and S. Dep. £1 1s.

Wakefield.—Drainage.—Construction of about 2,500 yds. of plain and reinforced concrete pipe sewers (21-in. to 51-in. diam.), manholes, syphon, outfall, and other incidental works in Dewsbury-rd. and in Snapethorpe and Thornes districts, for T.C. City S. Dep. £5.

MAY 8.

Barnes.—Improvements.—In Sheen-lane, from Christchurch-rd. to Sheen-gate, Richmond-park, for U.D.C. F. P. Kindell, E. and S. Dep. £2 2s.

Barnes.—Making-up.—Of Verdun-rd., Boileau-rd. (Parts 1 and 2), Washington-rd., Kilmington-rd., Wayside, for U.D.C. F. P. Kindell, E. and S. Dep. £2 2s.

Barnes.—Road.—Reinforced road foundation works, etc., Upper Richmond-rd., for U.D.C. F. P. Kindell, E. and S. Dep. £2 2s.

Southgate.—Making-up.—Of (a) Sherbrook-gardens, (b) Myddelton-gardens, (c) Queen's-av., for U.D.C. R. Phillips, S.

MAY 9.

***Various Places.**—Road Work.—At hospitals at Tooting, Dartford and Abbots Langley, for the M.A.B. Office of the Board, Victoria Embankment, E.C.4. Dep. £1 in respect of each work.

MAY 12.

Stretford.—Paving.—Various highways, for U.D.C. E. Worrall, S. Dep. £2 2s.

MAY 14.

***Nuneaton.**—Road Works.—Excavation, filling, new pitched foundations, sewers and surface water drains, etc., for T.C. R. C. Moon, B.S. Dep. £2 2s.

Portstewart.—Resurfacing.—Widening (part) and resurfacing with bituminous macadam the Strand-rd., for U.D.C. D. R. M'Ilreavy, Town S.

MAY 17.

Gloucester.—Resurfacing.—With asphalt, total of approximately 19,000 sq. yds., for T.C. City S., 19, Eastgate-st.

MAY 22.

London.—Remaking.—Of roadways with tar macadam, at Bethnal Green Children's Homes, High-rd., Leytonstone, E.11, for Bethnal Green B.G. C. Faulkner Jones, clerk, Guardians' Administrative Offices, Bishop's-rd., E.2. Dep. £1.

NO DATE.

Easingwold.—Tarspraying.—170,000 sq. yds., for R.D.C. H. H. Furnass, S.

Auction Sales, Tenders, etc.

MAY.

Hastings.—Berryman & Gilkes. By order of the court. Residential estate, 4 bungalows, 6 cottages, etc., to be sold by auction or privately. Auctioneers, 2, Hans-rd., S.W.3.

MAY 1.

Surrey.—King & Chasemore, at The Red Lion Hotel, Dorking (unless sold previously by private treaty). Leasehold business property known as The Mid-Surrey Lime Works, machinery, plant and equipment. Auctioneers, Richmond House, Horsham.

MAY 2.

Ewell.—Charles R. Davis & Co. Unreserved sale, by order of the owner, on the premises by kind permission, Epsom-rd., Ewell (at Mr. Garner's yard). New and s.h. building materials. Auctioneers, 285, Borough High-st., S.E.1

***Folkestone.**—Geering & Colyer, in consequence of expiration of lease at Broadmead Brickworks, Folkestone, stock-in-trade of brick and tile makers. Auctioneers, Ashford, Kent.

MAY 10.

***London.**—Frank G. Bourn, Ltd., at 62a, Aldersgate-st., E.C.1, stock of 50 tons of gum. Auctioneers, as above.

London.—Frank G. Bourn, Ltd., at 62a, Aldersgate-st., E.C.1, salvage stock of dry colours. Auctioneers, as above.

Uxbridge.—Constable & Maude will sell, by direction of George Rose, Esq., in 28 lots, at the Chequers Hotel, Uxbridge (unless previously sold privately), portions of the Harefield-place estate, Middlesex, also mansion, in all about 700 acres. Auctioneers, 2, Mount-st., Grosvenor-sq., W.1.

MAY 22.

***Islington, N.7.**—Henry Butcher, Hall & Co., at Brewery-road, Caledonian-road. Contents of Works of Varnish and Colour Manufacturers, comprising plant and machinery, stock and office furniture. Auctioneers, 63 & 64, Chancery-lane, W.C.2

Public Appointments.

APRIL 30.

Harrogate.—Clerk of Works required in connection with new hospital, by the Bd. of Governors. Elcock & Sutcliffe, FF.R.I.B.A., Avenue House, 21, Northumberland-avenue, W.C.2.

London.—Temporary Architectural Assistant in dept. of the Chief Engineer of the Metro. Water Board. Henry E. Stilgoe, M.Inst.C.E. Offices of the Board, 173, Rosebery-av., E.C.1.

Plymouth.—Two Building Inspectors in B.E. and S. Dept. required by the C.B. J. Wibberley, B.E., S. and A., Municipal-buildings.

MAY 7.

Brighton.—Engineering and Surveying Assistants, Assistant Building Inspectors and Town Planning Assistants required by the C.B. David Edwards, B.E. and S., Town Hall.

MAY 8.

Southall-Norwood.—Assistant Building Inspector required by the U.D.C. J. B. Thomson, B.E. and S. Stamped addressed foolscap envelope.

MAY 10.

***Swansea.**—Assistant Quantity Surveyor on the temporary staff of the Borough Architect's Dept. H. L. Lang-Coath, T.C., Guildhall.

MAY 12.

London.—Head of the Architectural, Bdg. and Sur. Dept., whole time or part time. W. M. Macbeth, Clerk to the Governors, Northern Polytechnic, Holloway, N.7.

MAY 14.

***Dewsbury.**—Architectural Assistant, Temporary Architectural Assistant and Temporary Engineering Assistant required by the Corporation. H. Dearden, B.E.

MAY 29.

***South Africa.**—Senior Quan. Sur., Measurer and Expert Workers-up required by the High Commissioners. The Sec., Union of South Africa, Trafalgar-square, W.C.2.

NO DATE.

***Kenya Colony.**—Architect's Assistant required by the Government of Kenya for a tour of 20 to 30 months' service. Apply, Crown Agents for the Colonies, 4, Millbank, Westminster, S.W.1, quoting M/582.

***Kenya Colony.**—Quantity Surveyor required by the Government of Kenya Colony. Apply at once by letter, Crown Agents for the Colonies, 4, Millbank, Westminster, S.W.1, quoting M/524.

PROPOSED NEW BUILDINGS & OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E. for Board of Education; M.A.B. for Metropolitan Asylums Board; and M.W.B. for Metropolitan Water Board; Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

Bairethery.—Council propose to construct reservoir at Hynestown, Naul, Co. Dublin, and another at Kilsough, South Balbriggan.

Barnes.—U.D.C. passed plans:—4 houses, Charlotte-rd., Ives Bros.; alterations and additions to "Queen's Arms" public house, by W. S. Trent; sanitary convenience, 310, Upper Richmond-rd., the United Dairies, Ltd.; 6 houses, Cumberland-rd., by R. B. Rowell; motor showrooms and 4 flats, 296, Upper Richmond-rd., by R. B. Rowell, for E. Hunt.

Barnsley.—C.B. received letter from M.H. stating that Minister is prepared to approve formal sanction to erection of 150 houses by direct labour.—Housing Committee recommend following houses be erected and Town Clerk be instructed to make application to M.H. for sanction to loan of £56,300 in respect of same:—100 houses in blocks of 2 containing 3 bedrooms, at £382 per house; 50 houses in blocks of 2 containing 2 bedrooms at £356 per house.—B.E. submitted plan of shops proposed to be erected on site of Corn Exchange.

Bedford.—T.C. approved plans:—G. W. Brown for De Parys Nursing Home, Ltd., alterations and additions, 42, De Parys-av.; Corporation, 24 parlour houses and 52 non-parlour flats, London-rd. site.

Bedlington.—U.D.C. considering the erection of 50 houses at Netherton.

Blackpool.—Corporation negotiating with Co-operative Society and L.M. & S. Rly. for construction of bridge over railway at Bispham.

Brighton.—It is proposed to erect bathing pool at £175,000.

Chatham.—T.C. passed plans:—6 houses, Rochester-st., for J. T. Costen; 4 houses at Chatham-hill, for H. Hinkley; 6 houses and garage at Bourneville-av., for H. Phillips & Son.

Chester.—T.C. approved recommendation of E.C. that City S. obtain tenders for (1) painting and decorating following schools:—Grosvenor St. John's, Boughton St. Paul's, Hunter-st., Egerton-st. Council, and Victoria-rd. Council, and (2) repairing playgrounds of Love-st. Council School (both departments) and Victoria-rd. Council School (boys' department).—Council resolved that City S. carry out structural alterations at Love-st. Council school.

Clipstone.—Foundation stone been laid for church at colliery village of Clipstone, near Mansfield, which is to cost over £16,000.

Cork.—Local Government Department authorised City Commissioners to borrow £75,000 for erecting 152 houses; and £22,500 for reconstruction of sewerage system in Patrick-st.

Doncaster.—Corporation accepted local tender of £55,800 for building of new isolation hospital and sanatorium.

* See also our List of Contracts, Competitions, etc.

"HENDERSON"

SLIDING DOOR GEAR

FOR FACTORIES, GARAGES, SCHOOLS, ETC.,

"TANGENT JUNIOR" FOR LIGHT DOORS

"TANGENT SENIOR" FOR HEAVY DOORS.

WRITE FOR BOUND CATALOGUE B.26 TO:-

P.C. HENDERSON, LIMITED,

TANGENT WORKS, BARKING, ESSEX.

Dublin.—Following plans been approved by City Architect:—21, 23, 25, 27, Fairfield-rd., 4 houses, G. Wearing; Botanic-rd., shed, John Player & Sons; Prebend-st., 7 houses, T. Connolly; 110, North Circular-rd., garage and shop, T. McGrath.

Ealing.—Plans passed by T.C.:—W. E. Cross, architect, 16, Uxbridge-rd., W.5, 8 houses, Greenford-rd.; A. S. Hopkins, Thorneyhedge-rd., Gunnersbury, 5 houses and garages, Rosemount-rd.; Kear & Langham, 1, New-gardens, W.13, 3 houses, Milton-rd.; H. & W. Kendall, 37, Byron-rd., Ealing, 13 houses, Gunnersbury-av.; Haymills, Ltd., 1, Grand-parade, Forty-lane, Wembley-Park, 8 houses and 6 garages, Corringway; and house, Audley-rd.

Edmonton.—U.D.C. sanctioned plans for Stanley Parkes & Brown for Major Jelicorse, for 6 semi-detached houses, Ranworth-rd.

Erith.—Plans been passed for 4 houses, Woolwich-rd., Abbey Wood, for H. E. Chandler.

Grays.—Surveyor submitted plans for 50 houses, to U.D.C., for approval.

Harrogate.—T.C. decided to commence erection of buildings on August 1 this year, for Royal Show.

Herne Bay.—U.D.C. passed plans:—3 houses on plots 505-512, Bournemouth-drive, for H. C. Box; 6 lock-up garages, adjoining "Shasta," The Broadway, for E. Edwards; 3 detached houses, Beltinge-rd., and 1 house, Salisbury-rd., for G. R. Brown & Sons; hall, The Broadway, for Mrs. M. H. Bell.

Heston and Isleworth.—U.D.C. passed plans:—F. W. Ferris, for 22 houses, new road off Jersey-rd.; F. J. Eedle & Meyers, extension of "The Osterley Hotel," Wood-lane; F. Perry & Sons, 6 houses, Inwood-rd.; P. Chase Gardener & Co., 4 houses, Castle-rd.; Perry Bros. (Ealing, Ltd.), 12 houses, The Crossways; F. W. Charity, 4 houses, The Firs Estate, Bath-rd.

Jarrow.—T.C. submitting to M.H. for approval an unhealthy area clearance scheme, which provision is made for 72 houses at Monkton, at £39,258.

Leamington Spa.—T.C. sanctioned plans for 10 houses off Cubbington-rd., for Leamington Slum Clearance, Ltd.

Leigh.—T.C. approved £350 for strengthening Mather-lane Bridge over canal approach to Leigh football field.

Leitrim.—County Board of Health adopted engineer's estimate of £718 for converting old workhouse, Carrick-on-Shannon, into County Home.

Liverpool.—Plans for premises for Lloyd's Bank, in Church-st., be prepared by H. J. Rowse, of 5, India-buildings.—H. F. Russell, architect, 15, Sweeting-st., prepared plans for parochial hall at Neston, Birkenhead.

London (Fulham).—B.C. passed plans:—Noel Parr, F.R.I.B.A., 42, Cranley-gardens, S.W.7, rolling way and cellar flap at 476, Fulham-rd. (the "King's Head" public-house); W. Doddington, 262, Earl's Court-rd., S.W.5, garages, etc., at 146, Lillie-rd.

London (Hackney).—Loans of £20,000 been sanctioned for the building and plant at Stamford Hill Sub-Station.—Council recommend £1,475 for redecoration work to maisonettes.—Plans passed:—Commercial Structures, Ltd., workshop, garage and stable adjoining 189, Amhurst-rd.

London (Lewisham).—B.C. passed plans:—Durling & Collins, Riverview-park, houses and garages; J. Garnet Hands, Dunoon-rd., 2 houses; Oswald Archer, Old Bromley-rd., Salvation Army hall.

London (Paddington).—B.C. are to make application to M.H. for sanction to borrow £17,837, for establishing Turkish and Russian vapour baths on "The Lodge" site, Porchester-rd.—Tenders are to be invited for erection of an engineer's workshop at the Central Baths, Queen's-rd.

London (St. Pancras).—B.C. recommend that Superintending Architect of L.C.C. be informed that Council approve of proposed alterations at 141, Kentish Town-rd.—Council also approved communication from E. H. Abbott, F.R.I.B.A., for reconstruction of vaults and coal shoots in front of 58 and 60, Whitfield-st.—Work of pointing brickwork of chimney of Dust Destructor and Electricity Station, King's-rd., is to be commenced.

London (Stoke Newington).—B.C. passed following:—Buildings at 72, Woodberry-grove, Stoke Newington, S. Hunt, on behalf of W. T. Pethick; W. A. Lewis, lock-up garages at rear of 18, Fairholt-rd.

Lurgan.—T.C. agreed to ask Ministry of Home Affairs for sanction to loan of £40,000 for road construction.—Council also agreed to borrow £11,000 for building workmen's houses.

Manchester.—Joshua Hoyle & Co., Ltd., 50, Piccadilly, acquired site at Gore-st. and Roby-st. for extensions. Plans by J. W. Beaumont & Sons, FF.R.I.B.A., architects, 24, Brazennose-st

Meath.—County Health Board been authorised to borrow £5,000 for improvements at County Home, Trim, and County Hospital, Navan.

Nenagh.—An operating theatre is to be erected at District Hospital at £950.

Newcastle.—Corporation passed plans for garden

city of bungalows at North Heaton covering 60 acres of land.

Northwood.—Enlarging Northwood and Pinner Hospital will cost £10,000.—It will also cost £3,686 to enlarge a Middlesex County school.

Nottingham.—It is proposed to build a church on site at Newstead to designs of C. F. W. Haseldine, A.R.I.B.A., King's-walk.

Oldham.—73 houses proposed to be erected in Belgrave-rd., Parade-st. and Thatcher-st., by F. Lord; 23 houses, Langham-rd., H. Partington.—Thomas Bros. proposing scheme for cottage houses.

Preston.—C.B. sanctioned plans:—J. Battersby, warehouse, Brook-st.; F. J. Dewhurst, warehouse and garage, Tulketh-brow; D. Ainsworth, 45 houses, Dodgson-rd.

Prestwich.—Design, submitted by B.S., been approved for reconstruction of clock tower.

Salford.—J. G. Swales & Co., Ltd., Junction-st., Hulme, Manchester, proposing to make improvements to "Derby Arms" public-house, Derby-st. Plans by E. Hartley Hacking, architect and surveyor, 5, Blackfriars-st., Manchester.

Sheffield.—It is proposed open-air theatre.—Sylvan Recreations (Hillsborough), Ltd., propose to apply to Watch Committee for a licence. It is understood that site is off Bradfield-rd., Hillsborough.

Sheffield.—Rev. A. Pawson and members of Ecclesfield Parish Church are making efforts to make a start on proposed improvements of Rawson Infants' School, Ecclesfield, estimated to cost £2,700. Plans by T. H. Robinson, A.R.I.B.A., Mazda-buildings, Campo-lane.—Members of St. Albans Church, Darnall, acquired site on Coleford-rd., for church. Architects, Gibbs, Flockton & Gibbs, FF.R.I.B.A., 15, St. James-row, Sheffield.

Shoreham.—Council is reconstructing its Town Hall.

Southend-on-Sea.—C.B. passed plans:—6 shops and 6 flats over, Southchurch-rd., W. G. Kimpton & Sons; 6 houses, Wellsted-gardens, J. J. Blanch & Sons; rebuilding of shop premises, 76-78, High-st., Southend, R. A. Jones & Sons, Ltd.; house and garage, Crescent-rd., 4 houses and 4 garages, Western-rd., F. C. Higgins; 2 houses and 2 garages, Mount-av., C. D. Osment; 3 houses and bungalow, Westcliff-drive and Salisbury-rd., A. W. Goodhew; 4 houses, Lonsdale-rd., A. S. Chalkley; 4 garages, Beach-av., Leigh-on-Sea Estates Co., Ltd.; 4 shops and houses, London-rd., north side, near Sydney-rd., H. A. Twitchett; 11 lock-up garages with w.c. and lavatory, Herschell-rd., G. W. Eves; 3 houses and 2 garages, Mount-av., F. C. Stark; rebuilding of stores, 148, High-st., David Greig, Ltd.; 4 houses, Marlborough-rd., L. H. B. Pitt.

Southport.—G. E. Bolshaw, 106, Lord-st., proposing to erect at corner of Coronation-st. and Lord-st. steel frame building.

Stockton.—Corporation propose to build motor bus garage at £4,700.

Thornton.—U.D.C. passed plans:—16 houses, Richmond-av., Cleveleys, for J. Cryer & Sons; 7 houses, Clarence and Cleveleys-avs., for G. Lancaster; pair of houses, Whiteside Way, for Mr. Wilson; 4 houses, St. Andrew's-av., for T. Clarke; pair of houses, Kingsway, for H. B. Powell; pair of houses, Fleetwood-rd., for Moore & Tittle; 6 houses, Bourne-rd., for Hawthorne & Bloor.

Tiverton.—R.D.C. been requested to erect another 20 houses on site near Cullompton recreation ground.

Tynemouth.—T.C. approved scheme for improving sea banks at £50,000.

Wallingford.—R.D.C. approved plans for new buildings in East Hagbourne and Didcot, and for new cemetery and buildings in East Hagbourne.—M.H. approved erection of houses at Georgetown, Didcot. Scheme included 19 parlour houses at £375 each, and 8 non-parlour at £325.

Walsall.—T.C. recommend acceptance of tender for erection of Isolation Hospital for £17,996.—Transport Committee recommend extension of motor-omnibus garage at Birchells at £8,378.

Watford.—Sports pavilion is to be built for Boys' Grammar School.

Woking.—U.D.C. recommend that A. S. W. and K. M. B. Cross, of New Bond-st., W., be invited to prepare sketch plans for proposed swimming baths.—A. Stuart Whitburn is to be invited to submit sketch plans and estimates for conversion of fire brigade station into offices for public health and rating departments.—Council is applying to Public Works Loan Board for loans of £1,550 for purchase of land at Woking Village, and £700 for purchase of land at Anchor Hill, for housing purposes.

Wokingham.—R.D.C. are to erect 46 houses and make application to M.H. for sanction to borrow £19,060 for same.

Woodford.—M.W.B. recommend £35,000 for provision and erection of three oil engines driving reciprocating pumps, including oil storage tanks, connections to mains and alterations to existing buildings at Woodford pumping station.

Wood Green.—New wall for cemetery will cost £17,500.

Worcester.—Worcestershire C.C. decided to build new offices for staff accommodation, at £20,000.

Worthing.—Plans been prepared by Clayton and Black, Prince Albert-st., Brighton, for furniture depository. Builders, J. Smith and Sons, Ltd., South Norwood, S.E. 25.

York.—City Council decided to carry out improvements at St. George's swimming baths at £4,000.

The New Oddenino's, Regent-street.

We learn that Messrs. Hammond Bros. & Champness, Ltd., of London, S.E.17, have received an order to install one of their latest passenger lifts in the new Oddenino Imperial Restaurant in Regent-street, W.1.

A STAFF DINNER

Messrs. F. McNeill & Co., Ltd., of Bunhill-row, E.C., held their staff dinner at the Pillar Hall, Olympia, W., on Monday evening, when the chairman of the company, Mr. Charles W. R. Pantlin, was supported by the guest of the evening, Sir Edward Iliffe, C.B.E., M.P., others present being Colonel Eric Field, Messrs. E. G. Bisseker, W. E. Evans, W. Taylor, James Whitby, and G. Ewbank.

Colonel Field, in proposing the toast of "The Firm," said that the firm had grown from a small beginning to the world-wide organisation it was to-day. That was largely due to increased business efficiency and the willingness to move with regard to the times in methods. He had previously turned up one of the firm's first advertisements (*The Builder*, December 28, 1844) which announced that their roofing felt had "obtained the prize for being the best and cheapest article for Roofing, to supersede slates, tiles, etc. It has been extensively used by Noblemen, Gentlemen and Tradesmen, in all parts of the kingdom, from whom the most flattering testimonials have been received." Yet another advertisement (*The Builder*, September 2, 1843) announced that "Parties sending to the manufactory, Lamb's Buildings, Bunhill-row, London, may have it immediately cut off from the machines." He wished the firm all prosperity, and with that toast he coupled the name of Mr. C. W. R. Pantlin.

Mr. Pantlin said that he was sure the original Mr. McNeill would be delighted to know that his business was as full of vigour, energy, and vitality as ever it had been. To-day it was stronger than ever before, and he had confidence in saying that in ten years time it would be in as good condition as it was to-day. A great part of the firm's success was the result of the loyal co-operation of the staff, between whom and the directorate there had always been the utmost goodwill.

Mr. E. G. Bisseker gave "The Guests," and Sir Edward Iliffe, C.B.E., in reply, said that McNeills were fortunate in belonging to an industry which was a necessity. Every house built contributed to the happiness of somebody or other. The industry had made a magnificent effort to catch up with the house shortage and had succeeded, but the fact that the shortage had been caught up need not worry the industry. As the standard of living increased so the standard of houses improved, too, and thus the industry was in for a good time for many years to come.

Mr. James Whitley gave "The Chairman," to which Mr. C. W. R. Pantlin replied briefly. During the evening a very pleasant entertainment of music was given.

TRADE NEWS

Chippings for Roadways.

Builders, builders' merchants, contractors, and others called upon to supply materials for the carrying out of tar-spraying and other forms of road and footway surface treatment during the forthcoming tar-spraying season, may be interested to know that Messrs. William Shepherd & Sons, Ltd., Milkstone, Rochdale, have made special arrangements for the dispatch of their fine slag chippings, gauge ¼ in. to ½ in., and that this material is available in truckloads in unlimited quantities ex Messrs. Shepherd's Shropshire works. Messrs. Shepherd & Sons also supply a cold emulsion, which is obtainable in two grades, for spraying, and also for patching and grouting purposes, under the name of "Shepmulsion."

The Albert Bridge, Windsor.

We learn that the reinforced concrete engineers for the new Albert Bridge spanning the Thames between Datchet and Old Windsor—opened on April 4 and noted in our last issue—were Messrs. the Trussed Concrete Steel Co., Ltd., of 22, Cranley-gardens, S.W.7.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him next week not later than Tuesday evening.

* **Denotes *accepted*.**
· **Denotes *provisionally accepted*.**
† **Denotes *recommended for acceptance*.**
§ **Denotes *accepted subject to modifications*.**

Andover.—Houses, for the T.C.:—

J. & A. Blunden, Crowthorn, Berks	£6,798 10
Knight & Pool	5,472 0
Dunning & Manning	5,175 0
M. Sainsbury	4,890 0
*F. Sainsbury & Sons	4,485 0
H. F. Brisley, Stratford-on-Avon	4,432 0

(Subject to M.H. approval.)

Barrow-in-Furness.—Vicarage at Urswick, for the Rev. A. Lynch. Mr. H. T. Fowler, A.R.I.B.A., 6, Cornwallis-street, Barrow:—

*Rainey Bros., Ltd., Barrow.
Plumbing and glazing—
*Wm. Ramsay, Ltd., Barrow.

Belturbet.—New town hall, for the U.D.C.:—

Joseph M'Mahon, Clones	£3,995 0 0
Joseph Quinn, Ballintemple, Ballinagh	3,950 0 0
Francis Prior, Ballinamore	3,800 0 0
Patrick Mulholland, Carrickmacross	3,744 13 11
J. F. Smith, Virginia	3,668 0 0
John O'Rourke, Crossboy, Dromahair	3,621 11 6
J. J. Smith, Stradone	3,488 10 0
*Joseph Devine, Belturbet	3,469 0 0

Birkenhead.—Demolition of St. Peter's school premises and erection of new buildings on the site for the E.C. Mr. T. Taliesin Rees, F.R.I.B.A, 64, Rodney-street, Liverpool:—

*J. A. Milestone & Son, Ltd., Liscard.

Bourne.—26 houses on the Hereward estate, for the U.D.C. Mr. W. S. Green, surveyor:—

	Houses.	Roads.
J. H. Roberts, Bourne	£9,943	£1,750 0 0
A. H. Scotney, Bourne	9,725	1,330 0 0
G Gray, Pinchbeck	10,068	
L. P. Longland, Thurlby	10,050	1,590 0 0
C. P. Unwin, Ecclesfield	9,494	1,480 0 0
*T. A. Scotney, Bourne	9,486	1,255 17 7
T. H. Hinson, Bourne	9,850	1,248 0 0
John Cracknell, Ltd., Peterborough	9,590	1,770 0 0

Brighton.—Rebuilding the old bunker walling in the boiler house at Southwick works, for the C.B.:—

Limpus & Son	£987
*Bierrum & Partners	795

Brighton.—Pylons to be erected on the new borough boundary in London-road, for the C.B. Mr. J. L. Demman, A.R.I.B.A., architect:—

Saunders	£3,094
*Field & Cox, Ltd.	3,090

Brighton.—Engine house, workshop, etc., at Patcham Works, for the C.B.:—

J. T. Mackley & Co., Shoreham-by-Sea	£13,363
James Longley & Co., Ltd., Crawley	12,875
James Barnes & Sons, Brighton	12,783
S. P. Bidder & Co., Manchester	12,567
W. R. Saunders, Brighton	12,150
G. Willmore Phillips & Co., Worthing	12,120
Rowland Bros., Horsham	11,876
James Bodle, Ltd., Eastbourne	11,666
Saunders', Brighton	11,506
R. Cook & Son, Ltd., Crawley	11,427
Limpus & Son, Hove	11,276
Rice & Son, Brighton	11,180
*Field & Cox, Ltd., Brighton	10,950
J. W. Woolnough, Ltd., Eastbourne	10,753

Buxton.—Extensions at the Cottage Hospital:—
*W. M. Bagshaw, Buxton.

Cardiff.—Painting the exterior of 396 houses on the Mynachdy housing site, for the T.C. Mr. G. H. Whitaker, City architect:—

*G. W. Hallewell, Cardiff £792

Carlisle.—54 houses in Duke-street, Newtown, and the Raffles, for the City Council:—

*Laing & Sons, Carlisle.

Clacton-on-Sea.—House for Mr. C. H. Miller. Mr. E. Robbins Nixey, architect:—

Chilvers & Smith	£3,811 0
Land & Son	2,768 18
Blakelock	2,760 0
*Evans & Co.	2,390 0

Darlington.—Extensions to retort house and coal handling plant at the gasworks, for the T.C.:—

*West's Gas Improvement Co., Ltd., Manchester.

Donegal.—Repairs and additions to the district hospital, for the Committee:—

*Mullin & Martin £1,687

Dursley.—Extensions of the premises of the Dursley Secondary School, for the Gloucestershire E.C. Mr. R. S. Phillips, F.R.I.B.A., County Education Architect. Quantities by Messrs. Vale & Kingsford, Gloucester:—

*F. J. Simmonds, Gloucester £8,145

(*Continued on page 757*)

PRICES CURRENT OF MATERIALS.*

Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 5 6
Second Hard Stocks	3 19 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at King's Cross	£ 2 12 3	Best Blue Pressed Staffs	9 5 0
Do., grooved for Plaster	2 14 3	Do. Bullnose	9 15 0
Do., Bullnose	3 6 3	Blue Wire Cuts	7 5 0

Best Stourbridge Fire Brick:—

2½ in.	8 11 0	3 in.	10 3 0

GLAZED BRICKS—

Best White Ivory, and Salt Glazed Stretchers	21 0 0	D'ble Str'tch'rs	29 10 0
		D'ble Headers	28 10 0
		One Side and two Ends	30 10 0
Headers	20 10 0	Two Sides and one End	31 10 0
Quoins, Bullnose and 4½in. Flats	27 10 0	Splays and Squints	28 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white Other colours. Hard Glaze. £5 10s. extra over white.

BREEZE CONCRETE SLABS.
Delivered London

	s. d.		s. d.
2 in. per yd. super.	1 11	3 in. per yd. super	2 9
2½ in " "	2 4	4 in. " "	3 6

	s. d.	
Thames Ballast	10 6	per yd.
Pit Sand	13 9	" "
Thames Sand	14 6	" "
Best Washed Sand	14 6	" "
½ in. Shingle for Ferro-Concrete	12 9	" "
¼ in.	14 0	" "
¼ in. Broken Brick	11 6	" "
Pan Breeze	8 0	" "

delivered 2 miles radius Paddington.

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification. Test £2 13 0 to £2 15 0 40s. alongside at Vauxhall in 80-ton lots.	
Ferrocrete per ton extra on above	0 10 0
Super Cement (Waterproof)	4 3 0
Roman Cement	8 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
" " Pink	5 10 0
Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" Fine	5 12 0
Sirapite, Coarse	3 9 0
" Finish	3 17 0
Grey Stone Lime	2 10 9
Chalk Lime	2 10 9
Best Ground Blue Lias Lime	1 17 6
Hair per cwt.	2 2 6
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months carr. pd.

Stourbridge Fireclay in s'cks 37s. 0d. per ton at rly. dp.

STONE.

	s. d.
BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 10
BEER STONE—RANDOM BLOCK— Free on rail at Seaton Station, per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. per ft. cube	3 1½
Selected approximate size one way, 1d. per cubic foot extra; selected approximately three sizes or for special work, 3d. per cubic foot extra.	
PORTLAND STONE.— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4½
Do. do. delivered on road wagons at above stations, per ft. cube	4 5½
White oasebed, 3d. per ft. cube extra.	
NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.	
HOPTON-WOOD STONE— Delivered at any Goods Station, London.	s. d.
Random blocks rom 10 ft. and over P. ft. cb.	17 0
Sawn two sides "	27 0
awn three or four sides "	32 0
YORK STONE, BLUE—*Robin Hood Quality*. Delivered at any Goods Station, London.	
6 in. sawn two sides landings to sizes (under 30 ft. super) Per ft. super	5 6
6 in. rubbed two sides, ditto "	6 0
3 in. sawn two sides slabs (random sizes) "	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 6½
1½ in. to 2 in. ditto, ditto "	1 3½
HARD YORK— Delivered at any Goods Station, London.	
Scappled random blocks Per ft. cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super) Per ft. super	5 1½
6 in. rubbed two sides, ditto "	6 1½
4 in. sawn two sides slabs (random sizes) "	2 1½
3 in. ditto ditto "	2 10
2 in self-faced random flags .. Per yd. super.	8 8

CAST STONE.

Delivered in London area in full van loads, per ft. cube: Plain, 8s. 6d.; Moulded, 9s 6d; Cills, 10s. 0d.

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£30 0	3 × 6	£21 0
4 × 9	26 0	3 × 11	25 0
4 × 8	25 0	2 × 11	26 0
4 × 7	23 0	3 × 9	24 0
3 × 8	22 0	2½ × 9	24 0
3 × 7	22 0	3 × 4½	21 0
2½ × 7	21 0	3 × 4	21 0

PLANED BOARDS.

1 × 11	£30 0	1 × 9	£28 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
⅜	18/-	1¼	30/-
½	21/-	1½	34/-
1	24/-		

TONGUED AND GROOVED FLOORING

Inches.	per sq.
1	24/-
1¼	30/-
1½	34/-

Ins. BATTENS. s. d
¾×2....per 100 ft. 2 6

MATCHING (BEST).

Inches.	per sq.
⅜	16/6
½	19/-
1	24/-

SAWN LATHS. s. d.
Per bundle 2 6

1" AND UP THICK.

	£ s. d.	£ s. d.
Dry Austrian Wainscot, per ft. cube	0 16 0	to 0 18 0
Dry American and/or Japanese Figured Oak, ft. cube	0 14 0	to 0 15 0
Dry American and/or Japanese Plain Oak, ft. cube	0 10 0	to 0 13 0
Dry sq. edged Honduras Mahogany, ft. cube	0 15 0	to 0 18 0
Dry Log cut Honduras Mahogany, ft. cube	0 16 0	to 1 1 0
Dry Cuba Mahogany, ft. cube	1 1 0	to 1 10 0
Dry Teak, ft. cube	0 13 0	to 0 15 0
Dry American Whitewood, ft. cube	0 10 0	to 0 14 0
Best Scotch Glue, per cwt.	4 10 0	to —
Liquid Glue, per cwt.	4 7 0	to 5 10 0

SLATES

First quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000.

	£ s. d.		£ s. d.
24 by 12	32 18 4	18 by 10	18 12 11
22 by 12	29 17 11	18 by 9	16 9 2
22 by 11	27 14 2	16 by 10	15 12 6
20 by 12	26 5 0	16 by 8	12 3 9
20 by 10	22 10 0		

TILES.

Delivered at London rate stations in full truckloads of not less than 6 tons. Per 1,000. f.o.r. London.

	£ s. d.
Best machine-made tiles from Broseley or Staffordshire district	5 7 6
ditto hand-made ditto	5 17 6
Ornamental ditto	6 2 6
Hip and valley tiles (per dozen) Hand-made	0 9 6
Machine-made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

	£ s. d.
R.S. Joists, cut and fitted	12 10 0
Plain Compound Girders	14 10 0
" Stanchions	16 10 0
In Roof Work	19 10 0

MILD STEEL ROUNDS.—To London Station, per ton

Diameter.	£ s. d.	Diameter.	£ s. d.
⅜ in.	12 0 0	⅜ in. to ½ in.	10 15 0
⅛ in.	11 0 0	⅝ in. to 2½ in.	10 10 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Tubes. Wrought Mild Steel.	Tubes. Genuine Staffs. Iron.	Fittings. ⅜ in. and under.	Fittings. Over ⅜ in.	Flanges. ⅜ in. and under.	Flanges. Over ⅜ in.
	%	%	%	%	%	%
Gas	67½	50	42½	45	52½	55
Water	63½	46½	37½	40	47½	50
Steam	60	42½	32½	35	42½	45
Galv. gas	55	37½	32½	35	42½	45
Galv. water	50	32½	27½	30	37½	40
Galv. steam	45	27½	22½	25	32½	35

C.I.—HALF-ROUND GUTTERS—London Prices ex Works

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/3½	11½d.	3½d.
3½ in.	1/4½	1/1½	3½d.
4 in.	1/6	1/3	3½d.
4½ in.	1/7½	1/4½	4½d.
5 in.	1/10½	1/6½	5½d.

O.G. GUTTERS.

3 in.	1/8	1/4½	3½d.
3½ in.	1/8	1/4½	3½d.
4 in.	1/9½	1/4½	3½d.
4½ in.	1/11½	1/7½	4½d.
5 in.	2/4½	1/10½	5½d.

RAIN-WATER PIPES, &c.

per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/10½	1/3	1/9½
2½ in. "	2/0½	1/4½	2/1½
3 in. "	2/6	1/9	2/7½
3½ in. "	2/11½	2/0½	3/0½
4 in. "	3/5	2/6½	3/8½

L.C.C. COATED SOIL PIPES—London Prices ex Works.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6 fts plain	3 3	2 4½	2 10
2½ in. "	3 9	2 7½	3 7
3 in. "	4 6	2 10	4 2½
3½ in. "	4 11½	3 7	4 11½
4 in. "	5 5½	4 0½	5 9

L.C.C. COATED DRAIN PIPES—London Prices ex Works

	Pipe, angles, stock angles	Bends, stock Branches.
	£ s. d.	s. d.
3 in. per yd. in 9ft. lengths	4 4	5 1
4 in. " "	6 2	5 8
5 in. " "	7 2	10 10
6 in. " "	8 6	13 2

	s. d.
	8 0½
	10 0
	17 1
	21 9

Gasken for jointing, 38/6 per cwt.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common bars	13 0 0	to	14 10 0
Staffordshire Crown Bars— Good merchant quality	14 5 0	to	15 15 0
Staffordshire Marked Bars	16 5 0	..	17 5 0
Mild Steel Bars	10 0 0	..	11 0 0
Steel Bars, Ferro-Concrete quality, basis price	10 0 0	..	11 0 0
Hoop iron, basis price	12 0 0	..	13 0 0
" Galvanised	27 0 0	..	28 0 0
Soft Steel Sheets, Black— Ordinary sizes, to 20 g.	13 5 0	..	14 5 0
" " " 24 g.	14 5 0	..	15 5 0
" " " 26 g.	16 5 0	..	17 5 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 10 0	..	16 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	16 10 0	..	17 10
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	18 10 0	..	20 10
No. 1 quality £4 per ton extra.			
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9 ft. to 20 g.	18 0 0	..	19 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	18 10 0	..	19 10 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	21 10 0	..	22 10 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	22 0 0	..	23 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 0 0	..	26 0 0
Best Soft Steel Sheets, 26 g.	25 10 0	..	26 10 0
Cut Nails, 3 in. to 6 in.	19 0 0		

(Under 3 in. usual trade extras.)

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

LEAD, &c.

(Delivered in London.)	£ s. d.
LEAD—Sheet, English, 4 lb. and up	28 10 0
Pipe in coils	29 0 0
Soil pipe	32 0 0
Compo pipe	33 0 0

NOTE.—Country delivery, 20s. per ton extra; lots under 3 cwt. 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes. 5s. cwt. extra.

Oil lead, ex London area, at Mills per ton 18 15 0

COPPER.

	s. d.
Seamless Copper tubes (basis) per lb.	1 1
Strong sheet "	1 0
Thin "	1 1
Copper nails "	2 3
Copper wire "	2 4

PLUMBERS' BRASS WORK.
Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

CAPS AND SCREWS.

1½ in.	1¾ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	29/-	36/-	68/- per doz.

BRASS SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES, S.F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

1½ in.	1½ in.	2 in.	3 in.
8 lbs. P. traps	35/-	41/-	56/-	101/- per doz.
8 lbs. S. traps	35/-	45/-	66/-	126/- "

TIN.—English Ingots, 3/1 per lb. SOLDER.—Plumber's 1/3, Tinmen's 1/6, Blowpipe 1/7 per lb.

PAINTS, &c.

			s. d.
Raw Linseed Oil, in pipes	per gallon		0 2 11
" " "	in barrels	"	0 3 1
" " "	in drums	"	0 3 3
Boiled " "	in barrels	"	0 3 3
" " "	in drums	"	0 3 6
Turpentine in barrels		"	0 3 10
"	in drums (10 galls.)	"	0 4 0
Genuine Ground English White Lead, per ton (In not less than 5-cwt. casks.)			51 0 0

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

PAINTS, &c. (*contd.*)

		£	s.	d.
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J." Brand, and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	69	10	0
Red Lead, Dry (packages extra)..	per ton	39	10	0
Best Linseed Oil Putty	per cwt.	0	15	0
Filicol	"	0	15	6
Size. XD quality	fkn.	0	3	6

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per ft.		Per ft.
15 oz. fourths ..	2½d.	32 oz. fourths	6½d.
15 ,, thirds ..	3½d.	32 ,, thirds	8½d.
21 ,, fourths ..	3½d.	Obscured Sheet, 15 oz.	3½d.
21 ,, thirds ..	4½d.	,, 21 ,,	4½d.
26 ,, fourths	4½d.	Fluted 15oz.6½d.,21oz.	9d.
26 ,, thirds ..	6½d.	En'iled 15 oz.4½d.,21oz.6½d.	

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per ft.
⅛ Rolled plate	4½d.
⅛ Rough rolled	5½d.
¼ Rough rolled	5½d.
Figured Rolled, Baltic, Oceanic, Arctic Stippolyte, and small and large Flemish White	5½d.
Ditto, tinted	8½d.
Rolled Sheet	4½d.
White Rolled Cathedral	4½d.
Tinted do.	6½d.

Cast plate is same price as rough rolled.

VARNISHES, &c.

		Per Gallon £	s.	d.
Oak Varnish	Outside	0	14	0
Fine ditto	ditto	0	16	0
Fine Copal	ditto	0	18	0
Pale Copal	ditto	1	0	0
Pale Copal Carriage	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	6
Fine Copal Flatting	ditto	1	0	6
Hard Drying Oak	ditto	0	18	0
Fine Hard Drying Oak	ditto	0	19	0
Fine Copal Varnish	ditto	1	0	0
Pale ditto	ditto	1	2	0
Best ditto	ditto	1	12	0
Best Japan Gold Size		0	12	6
Best Black Japan		0	10	6
Oak and Mahogany Stain (water)		0	12	0
Brunswick Black		0	7	6
Berlin Black		0	14	6
Knotting (patent)		1	5	0
French and Brush Polish		0	17	0
Liquid Dryers in Terebine		0	9	0
Cuirass Black Enamel		0	7	0

NEW BUILDINGS IN SCOTLAND

Edinburgh.—BUILDINGS.—The Edinburgh Dean of Guild Court has sanctioned the following:—City—electricity transformer house, Rose-street-lane; C. H. Dunlop—six double bungalows at House o' Hill-road, Blackhall; Alexander Forbes—two bungalows at Craigleith-gardens, Blackhall; King, Craig & Co., Ltd.—eight garages at 72, Eyre-place; Mrs. Marion M'Laren—eight villas at Sydney-terrace.

Aberdeen.—BUILDING.—The Links and Parks Committee of Aberdeen Town Council have approved of a report by the superintendent of the city parks recommending the erection of new glass-houses and propagating frames at the Duthie Park at £4,100.

Pitlochry.—HOUSING.—The Housing Committee of the Perthshire Highland District Committee have accepted tenders for the erection of eight semi-detached cottages of three rooms and kitchenette at Pitlochry, at £500 each.

Oban.—HOUSES.—A scheme for 28 houses in Soroba-road, Oban, has been approved by the Town Council, and Mr. D. Galloway, Burgh Surveyor, has prepared the plans for the same. Tenders are now being invited.

Dunblane.—VESTRY.—The congregation of the Episcopal Church, Dunblane, have held a sale of work in aid of funds for the building of a new vestry.

Drymen.—WIDENING.—The Joint Bridges Committee of the Dumbarton and Sterling County Councils has resolved to reconstruct and widen the Drymen Bridge, which spans the River Endrick at Drymen, at an estimated cost of £11,000.

Banff.—HOUSES.—Preparations are now being made for the erection of another four blocks of 16 three-apartment houses in connection with the Banff municipal housing scheme. Mr. David Malcolm, Burgh Surveyor, is the architect.

Inverbervie.—HOUSING.—The Town Council have received a letter from the Scottish Board of Health giving their general consent to the housing scheme.

Glasgow.—HOUSING.—The Glasgow Corporation Housing Committee decided to ask the General Finance Committee to apply to the Scottish Board of Health for authority to borrow a further sum of £2,100,000 to meet the estimated cost of their housing scheme for the ensuing year.

Edinburgh. — BUILDINGS. — Part of the Gogarburn scheme for dealing with mental defectives which the Edinburgh District Board of Control have in hand, has been before the Edinburgh Dean of Guild Court. An interim warrant has been granted by the Court for the erection of a central block of buildings, which is to cost £50,000. The architect is Mr. Stewart Kaye, A.R.I.B.A.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rate of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers—Masons'‡ Bricklayers'† Plasterers'†
Aberdeen	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Airdrie	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Alexandria	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Arbroath	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/5½	1/1
Ayr	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2½
Bathgate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2 to 1/3
Blairgowrie	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/-
Bo'ness	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Coatbridge	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Dumbarton	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Dumfries	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/6½	1/2
Dundee	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3
Dunfermline	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/7½	‡1/2½ †1/3–1/3½
Edinburgh	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3½
Falkirk	1/7½	1/7½	1/7	1/8	1/7	1/7	1/6½	1/2½
Fort William	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Galashiels	1/6½	1/7	1/6½	1/7	1/6½	1/6½	1/7	1/2
Glasgow	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Greenock	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7	1/2½
Hamilton	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Hawick	1/7	1/7	1/7	1/7–1/7½	1/7	1/7	1/7	1/2½
Helensburgh	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7	1/2½
Inverness	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/- to 1/2
Kilmarnock	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	1/2½
Kirkcaldy	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3–1/3½
Kirkwall	1/5	1/5	1/4	1/5	1/5	1/4	1/4	1/-
Lanark	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Leith	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3½
Motherwell	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Perth	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Stirling	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/7½	1/2½
Stirlingshire (Eastern District)	1/7½	1/9	1/7½	1/8½	1/7½	1/7½	1/8	1/2½
Wishaw	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 749.

Index of B.E.S.A. Specifications.

The British Engineering Standards Association has published—price 1s., at 28, Victoria-street, W.1—an indexed list of British Standard Specifications and Reports. The Association exists for the purpose of drawing up British Standard Specifications for materials, machinery or apparatus. It does not, however, embark on such work on its own initiative, but at the specific request of an authoritative body such as a representative trade organisation, a technical society, or a Government department, and to fill a recognised want. In this way it fulfils a need of Industry that is greatly appreciated. This index contains a full list of specifications and reports which, sooner or later, every architect, engineer, surveyor and contractor will find something of value and use.

Registered Telegraphic Addresses.

Sell's Directory of Registered Telegraphic Addresses for 1928—which is the 43rd year of publication—contains, brought up to date, its usual invaluable information. Price 45s. (including the Supplementary Edition issued in July), it may be obtained from Business Dictionaries, Ltd., 8-9, Johnson's-court, E.C.4. The new and improved system of reference introduced last year for the first time is continued in this issue, to enable subscribers to find immediately the owner of any registered telegraphic address. The publishers have from time to time added many other useful features, including a classified trades list for the whole country, and the book is recognised as the standard general directory of Great Britain and Ireland. The official lists for London and country are to be found in Section I. The telephone numbers of all firms in the lists who are subscribers to the telephone system are given by arrangement with the Post Office, thus subscribers have in one volume the telephone numbers of the most important firms throughout the United Kingdom. In Section II the abbreviated telegraphic addresses are alphabetically arranged in two divisions—London and country—a new feature has been introduced in this issue whereby the registrant may have his name and address added after the registered telegraphic address in Section II at a small charge, to save reference back to Section I for those particulars. The classified trades list (Section III) contains nearly 130,000 names of firms in the United Kingdom, arranged in order of trade under some 3,500 trade headings. The utility and scope of this trades list will be readily seen and acknowledged upon reference to its pages, in which are to be found the names and addresses of the chief firms in every branch of business in the United Kingdom.

Sell's Building Trades List (printed on buff paper, following the classified list of trades in Section III) contains the names and addresses of the leading firms grouped under their respective classifications, together with the special announcements of firms, and forms a comprehensive guide to the chief producers and suppliers of every kind of requisite used in the construction, maintenance, and equipment of buildings. Sell's Building Trades List is also issued as a separate publication, specially for the use of architects and builders.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	0
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	38	0
Add if in underpinning in short lengths	" "	7	0
Add if in floors 6 in. thick	" "	3	3
Add if in beams	" "	3	9
Add if aggregate 1 : 2 : 4	" "	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	32	0	0
Add if in stocks	"	7	10	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	1	10	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	" "	9	6
Three-quarter-inch on flats in two thicknesses	" "	6	3
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	2

MASON.

		s.	d.
York stone templates fixed	per foot cube	13	0
York stone sills fixed	" "	22	0
Bath stone and all labour fixed	" "	10	6
Beer stone and all labour fixed	" "	15	0
Portland stone fixed	" "	20	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	"	80	9
Do. 24 in. × 12 in. Do. Do.	"	90	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	5	0
Do. joists	" "	5	6
Do. roofs, floors and partitions	" "	6	0
Do. trusses	" "	8	6

		¾″	1″	1¼″	2″
Deal rough close boarding	per sq.	35/6	40/-	45/-	72/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	50	0
Do. to beams	per ft. sup.	0	11
Centre for arches	"	1	6
Gutter boards and bearers	"	1	0

FLOORING.

		¾″	1″	1¼″	1½″
Deal edges shot	per sq.	—	44/6	53/-	60/6
Do. tongued and grooved	"	—	49/-	57/6	65/-
Do. matchings	"	45/-	51/-	—	—
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/-	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	1
Add for fitting and fixing	" "	0	3
Deal-cased frames with 1 in. inner and outer linings, 1¼ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights; average size	" "	3	9

DOORS.

		1¼″	1½″	2″
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	"	2/5	2/8	2/11
Two-panel moulded both sides	"	2/8	2/11	3/2
Four-panel Do. Do.	"	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1″	1¼″	1½″
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	"	1/4	1/6	1/9
Add if cross-tongued	"	2d.	2d.	2d.

STAIRCASES.

	1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail : average, 3 in. × 3 in.	" "	6	0
Add if ramped	" "	12	0
Add if wreathed	" "	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	"	19	0
Do. stanchions	"	21	9
In roof work	"	27	6

RAIN-WATER GOODS.

		3″	4″	5″	6″
Half-round plain rebated joints	ft. run	1/6	1/9	2/-	2/6
Ogee Do. Do.	"	1/9	2/-	2/6	3/3
Rain-water pipes with ears	"	1/9	2/7	—	—
Extra for shoes and bends	each	4/4	5/11	—	—
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	42	0
Do. Do. in flats	"	41	0
Extra labour and solder in coated cesspools	each	6	9
Welf joint	per ft. run	0	6
Soldered seam	" "	1	3
Copper nailing	" "	0	3

		½″	¾″	1″	1½″	2″	4″
Drawn lead waste	per ft. run	1/2	1/9	2/-	3/4	4/-	—
Do. service	"	1/8	2/2	2/7	3/10	—	—
Do. soil	"	—	—	—	—	6/9	
Bends in lead pipe	each	—	—	—	—	3/3	8/2
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6	—
Red lead joints	"	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	"	—	—	—	14/7	19/6	—
Bib cocks and joints	"	6/4	9/7	15/4	41/-	—	—
Stop cocks and joints	"	15/4	17/2	25/8	64/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	6
Do. Do. Sirapite	" "	2	9
Do. Do. Keen's	" "	4	0
Add saw lathing	" "	1	7
Add metal lathing	" "	2	6
(Not including hangers or runners, etc., for suspended ceilings.)			
Portland cement screed	" "	2	2
Do. plain face	" "	3	3
Mouldings in plaster	per 1 girth ft.	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	6

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	8½
26-oz. Do.	" "	1	0
Obscured sheet	" "	1	1
¼-in. rolled plate	" "	0	9
¼-in. rough rolled or cast plate	" "	0	10½
¼-in. wired cast plate	" "	1	4

PAINTER

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	" "	0	7
Plain painting, 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup.	0	6
French polishing	" "	1	2
Preparing for and hanging paper	per piece, 2/- to 4/-		

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployments Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS

(*Continued from page* 753.)

Ealing.—12 flats at Pope's-lane, for the T.C.:—
*Geo. Ball (Willesden), Ltd. £4,424 2

Ellesmere Port.—Schools for Father Hayes, Our Lady Star of the Sea, Enfield-road. Messrs. Edmund Kirby & Sons, F.R.I.B.A., architect, 5, Cook-street, Liverpool:—
*France and Heywod, Ellesmere Port.

Fermoy.—Repairs at the Courthouse, for the Cork C.C.:—
*E. Daly ... £315

Filey.—New buildings, on Station-road, for the U.D.C. Mr. F. Vaux, F.R.I.B.A., chartered architect, Dansmoor-chambers, Quay-road, Bridlington:—
*Sawdon Bros., Filey.

Folkestone.—74 additional houses on the Canterbury-road—Dover-road housing site, for the T.C.:—
*East Kent Building Co. ... £26,500

Hollinwood.—Improvements to the Railway Hotel, for Mr. P. Lawless. Messrs. Brameld & Smith, architects, 4, Cannon-street, Manchester:—
*T. Percival.
Steelwork—
*Bennett & Sons.
Plasterers—
*A. & S. Wallace.
Plumber—
*A. J. Young.
(All of Manchester.)

Kanturk.—Repairs to the Courthouse, for the Cork C.C.:—
*J. O'Sullivan ... £120

Leamington Spa.—Alterations to the porter's lodge, for the T.C.:—
*Atkins & Bennett ... £175 10

Leyton.—Pavilion and dressing-rooms on the school playing field at Ive Farm, for the E.C.:—
*J. & J. Dean £613

Liverpool.—Reconditioning premises at Bramley More Dock, for the T.C.:—
*W. F. Chadwick, Ltd., Liverpool.

Liverpool.—Alterations to the Infirmary, for the West Derby B.G. Mr. E. Bailey, L.R.I.B.A., architect, 9, Cook-street:—
*Litherland Bayliff, Liverpool.

London.—Tenders approved for March by H.M. Office of Works.—*Building Works:* Aldridge, Walsall, telephone exchange—erection: Letts & Airston, Walsall. Bearwood, Birmingham, telephone exchange—repairs, etc.: J. E. Harper & Sons, Ltd., Birmingham. Birmingham, P.O. stores depot—slater: Ellis, Partridge & Co., Ltd., Leicester. Blackpool. South Shore P.O., etc.—asphalter: Limmer & Trinidad Lake Asphalte Co., Ltd., London; flooring: Diespeker & Co., Ltd., London; plasterer: Rimmer & Son, Blackpool; steelwork: T. Blackburn & Sons, Ltd., Preston; stonework, etc.: Pearson Bros. & Campbell, Ltd., Liverpool. Boughton, Monchelsea, Maidstone, telephone exchange—asphalter: French Asphalte Co., Ltd., London; steelwork: Redpath, Brown & Co., Ltd., Edinburgh. Bramhall, Stockport, telephone exchange—erection: Mark Lane & Co., Ltd., Stockport, Bristol; central telephone exchange—asphalter: Ragusa Asphalte Paving Co., Ltd., Bristol. Bute Docks, Cardiff, employment exchange—asphalter: The Western Trinidad Lake Asphalt Co., Ltd., Cardiff. Canford Cliffs, Bournemouth, telephone exchange—erection: R. J. Bishop, Parkstone. Christchurch telephone exchange—erection: Bryant & Trowbridge, Christchurch. Cobham P.O., etc.—plasterer: A. Russell, Esher. Connah's Quay, Chester, telephone exchange—erection: T. G. Huxley & Co., Chester; steelwork: Guy & Co., Liverpool. Crewe P.O., etc.—mason: Henry Harding & Sons, Nantwich. Cromer Coastguard Station—alterations: J. Balls & Sons, Great Yarmouth. Dollis Hill, Cricklewood, P.O. laboratory—erection: Triangular Construction Co., Ltd., E. Molesey. Fulham, telephone exchange—glazier: W. H. Garmston & Co., London. Gloucester—maintenance work: W. T. Nichols, Ltd., Gloucester. Gourdon, Montrose, Coastguard Station—erection of cottages: A. Adamson, Laurencekirk. G.P.O., E.C.—Mezzanine floor: E. D. Winn & Co., Ltd., London. Heywood employment exchange—asphalter: Limmer & Trinidad Lake Asphalte Co., Ltd., London; painter: Bentley & Pullen, Bury; plasterer: Lomax & Ormerod, Tottington; plumber, etc.: G. Brown & Son, Tottington; slater: R. Ratledge & Sons, Bury; steelwork: J. Webb & Sons, Ltd., Bury. Horsham P.O., etc.—steelwork: Redpath, Brown & Co., Ltd., Edinburgh. London District—maintenance work: John Mowlem & Co., Ltd., London. Loughton, Essex, branch P.O., etc.—erection: H. J. & A. Wright, Ltd., Great Missenden. Morecambe, Lancs., P.O., etc.—steelwork: Edward Wood & Co., Ltd., Manchester. Newcastle-on-Tyne, Ministry of Pensions hospital—painter, etc.: J. Denton, Gateshead; plasterer: J. R. Buchan, Newcastle-on-Tyne; plumber: M. Aynsley & Sons, Ltd., Newcastle-on-Tyne. Petersfield P.O., etc.—alterations, etc.: H. J. & A. Wright, Ltd., Great Missenden; asphalter: The London Asphalte Co., Ltd., London; concrete steps, etc.: Malcolm Macleod & Co., Ltd., London; flooring: Hollis Bros. & Co. Ltd., London; roofing: Permanite, Ltd., London; steelwork: A. D. Dawnay & Sons, Ltd., London. Princess Risborough, Bucks., research station—erection of laboratory, etc.: Webster & Cannon, Aylesbury. Redhill Station Sorting Office—extension: J. Crewdson, Horley. Skegness, Lincs., P.O., etc.—erection: F. W. Atkinson & Son, Brigg. Southbourne, Bournemouth, telephone exchange—asphalter: Ragusa Asphalte Paving Co., Ltd., London; joiner: The Parkstone Joinery Co., Parkstone. Southend, Campbeltown, coastguard cottages—erection: Neil McArthur, Campbeltown. South Kensington, Science Museum—plasterer: A. Marton, London. Trafford Park, Manchester, telephone exchange—extension: J. Gerrard & Sons, Ltd., Manchester. Upminster, Essex, telephone exchange—fixing steelwork: J. Green, Westcliff-on-Sea.—*Engineering Services:* Newcastle-on-Tyne, Ministry of Pensions hospital—heating, etc.: James Combe & Son, Ltd., London. Sutton telephone exchange—heating, etc.: James Combe & Son, Ltd., London.

London.—Tenders accepted for March by H.M. Commissioners of Crown Lands:—New carthorse stable, with chaff house and hay house; conversion of open sheds into milking sheds; conversion of stable and chaff house into cowhouse; alterations to bull pens and alterations to piggeries, "Roundway Farm," Bishop's Cannings, Wilts: A. J. Box, St. Edith's Marsh, Bromham, Chippenham.—Repairs to Queen's Drive, Esher, Surrey: Stephen Kavanagh & Co., Surbiton Hill, Surrey.

London.—Tenders accepted by H.M. Air Ministry for March.—*Buildings and Works Services:* Accommodation (Halton): H. J. & A. Wright, Ltd., Great Missenden. Aeroplane shed (Novar): Glasgow Steel Roofing Co., Ltd., Possilpark, Glasgow. Artificers Works (Calshot): A. E. Jukes & Son, Ltd., Southampton; (Croydon and Kenley): Pearce Bros., Bromley; (Duxford): Rice Bros. (Norwich), Ltd., Norwich; (Eastchurch): G. E. Wallis and Sons, Ltd., Gravesend; (Gosport): W. E. Chivers & Sons, Ltd., Devizes; (Halton): W. Laughton, Bedford; (Harlescott): W. Davies, Tenby; (Hawkinge): Pearce Bros., Bromley; (Henlow): W. Laughton, Bedford; Lee-on-Solent): W. E. Chivers & Sons, Ltd, Devizes; (Manston): J. B. Sharman, Ltd., Ramsgate; (Uxbridge): W. S. Try, Cowley, Uxbridge. Cables, underground electric (Duxford): T. Clarke & Co., Ltd., London. External services (Uxbridge): Ashford Builders Co., Ltd., London.

London.—Tenders accepted by H.M. War Office for March.—*Buildings, Works and Services:* Newcastle, artificers' works: G. R. Wade & Son, Richmond, Yorks. Sandhurst, artificers works: E. C. Hughes, Wokingham. Lydd, artificers' works: G. H. Bates & Son, Lydd. N. Aldershot, artificers' works: Blackdown and Deepcut, artificers' works: C. Morgan & Son, South Farnborough. Weedon, artificers' works: Bosworth & Wakeford, Daventry. Canterbury, artificers' works: J. E. Wiltshier & Co., Canterbury. Chatham, artificers' works: J. R. McL. Keil, Camberley. Dover; Shorncliffe, artificers' works: G. Lewis & Sons (Dover), Ltd. Lichfield, artificers' works: F. Perks & Son, Ltd., Long Eaton. S. Aldershot, artificers' works: T. H. Jones, S. Farnborough. Bury St. Edmunds, artificers' works: A. E. Flory & Co., Colchester. Gravesend, artificers' works: G. Peacock, Gravesend. Bordon, artificers' works: T. H. Jones, S. Farnborough. Brighton: Chichester, artificers' works: Popkiss & Son, Brighton. Feltham, reconstruction of "D" hangar: J. B. Edwards & Son, London. Maidstone, artificers' works: Pickup & Earl, Maidstone. Sheerness, artificers' works: I. Allison & Son, Sheerness.

London.—New swimming bath at Laurie Grove, New Cross, S.E.14, for the Deptford B.C. Borough Surveyor:—

Rowley Bros., Ltd.	£17,345
T. D. Leng	16,850
Burnand & Pickett, Ltd.	16,600
H. L. Holloway & Son	16,487
Arthur Logan	15,999
F. R. Hipperson	15,990
H. & J. Taylor	15,914
Industrial Constructions, Ltd.	15,545
John Garlick (1910), Ltd.	15,379
E. D. Winn & Co., Ltd.	15,103
Jno. Crewdson	15,075
Perrys (Ealing), Ltd.	14,929
F. & A. Bayntun	14,760
A. Roberts & Co., Ltd.	14,727
Patman & Fotheringham, Ltd.	14,721
Galbraith Bros., Ltd.	14,500
Wm. Simms	13,640

(All of London.)
(The whole matter has been referred to M.H. for consideration.)

London.—Infant welfare centre and flats, for the Kensington B.C. Mr. E. J. Messent, A.M.I.C.E., Borough Engineer and Surveyor. Quantities by Mr. R. J. Smellie, surveyor, 34, Henrietta-street, W.C.2:—
*R. Niblett & Co., London ... £4,325

London.—Pointing the brickwork of the chimney of the Dust Destructor and Electricity Station in King's-road, N.W., for the St. Pancras B.C.:—
*R. Anderson & Co. ... £185

London.—Extension of the buildings at the Balcorne-street sub-station, for the Hackney B.C.:—
*J. Stewart & Sons, Tottenham ... £2,794 10
(In lieu of tender withdrawn.)

London.—Electric light installation at the Buckingham Palace-road library, for the Westminster City Council:—

Belshaw & Co., Ltd., ...	£637 0 0
Buchanan & Curwen	495 0 0
Drake & Gorham, Ltd.	470 0 0
H. E. Keen & Co., Ltd.	435 19 6
*Coleby & Co.	422 0 0

London.—Alterations, repairs, redecorations and conversion to two maisonettes, at "The Woodlands," Vanbrugh-hill, Greenwich, S.E.10, for the Greenwich B.G. Mr. A. Roberts, F.R.I.B.A., architect, 92, London-street, S.E.10:—

W. Harris, Ltd.	£1,670 0
A. O. Laird	1,480 0
W. J. Turpin	1,417 5
P. Jones & Co.	1,374 0
Stevenson & Co.	1,364 12
T. D. Leng	1,338 0
H. & J. Taylor	1,325 0
W. Martin	1,323 0
H. Groves & Son	1,306 0
Burnand & Pickett, Ltd.	1,295 0
A. G. Shorter	1,280 0
W. Mills & Son	1,265 10
R. Woolaston & Co.	1,265 0
Streek & Co., Ltd.	1,227 0
Lastons, Ltd.	1,050 0
‡George Coe	1,048 0

(All of London.)

London.—Structural work to part of the river wall adjoining Grosvenor-road, for Westminster City Council:—

John Mowlem & Co., Ltd.	£237 2
*John Shelbourne & Co., Ltd.	201 11

Loughborough.—Extension of the accommodation at Loughborough College, for the Leicestershire E.C.:—
‡Wm. Moss & Sons, Loughborough ... £15,442

Manchester.—Conversion of premises 176 and 178, Oldham-road and Poland-street, for Mr. E. Connors, 174, Oldham-road, New Cross, Manchester. Mr. W. Dootson, architect, Regent House, Cannon-street:—
*Gladden & Davies, Manchester.
Steelwork—
*Phœnix Construction Co., Ltd., Manchester.

Mitcham.—New factory for the Mullard Radio Valve Co., Ltd. Mr. W. H. Chapman, surveyor:—
*Welwyn Builders, Ltd., Welwyn Garden City, Herts.

Monaghan.—Town sewerage scheme, for the U.D.C.:—

Jas. M'Grath, Omagh	£5,639
Granger Bros., Hollywood	4,572
P. M'Kenna & Sons, Armagh	3,935
Roberts & Armstrong, Belfast	3,810
R. A. Ferris, Armagh	3,748
†Patk. Thomas, Belfast	3,391

Mullingar.—Wall at the military barracks, for the Town Commissioners:—
*J. Sexton ... £597

Newcastle-upon-Tyne.—15 houses on the Cowgate housing estate, for the T.C. Housing Architect, 18, Cloth-market, Newcastle:—

A. Anderson, Newcastle ...	£6,944 0 0
Armstrong & Cunningham, Walker	6,495 0 0
Andrew Best, Newsham, Northumberland	6,506 17 4½
R. F. Brown & Co., Blaydon-on-Tyne	6,613 2 6
A. Elcoat, Bearpark, Co. Durham	5,962 10 0
Elliott Bros., Newcastle	5,975 0 0
W. Hall (Contractors), Ltd., Gateshead	6,450 0 0
*J. S. Hetherington, Newcastle ...	5,664 0 0
Long & Christie (Builders), Ltd., Newcastle	6,540 0 0
Noble & Son, Ltd., Newcastle ...	6,000 0 0
Nordmann & Sons, Ltd., Dunston-on-Tyne	5,997 0 0
A. R. Robertson, Blyth	6,207 9 6
G. Robertson, Ltd., Newcastle ...	5,660 0 0
Wm. Spetch, Gosforth, Newcastle	6,105 0 0
F. T. A. & R. Veevers, Cleadon, Co. Durham	5,917 10 0

Newcastle-upon-Tyne.—12 houses on the Pendower housing estate, for the T.C. Housing Architect:—

A. Anderson, Newcastle ...	£5,532 0 0
Armstrong & Cunningham, Walker	5,304 0 0
Andrew Best, Newsham, Northumberland	5,267 8 4
R. F. Brown & Co., Blaydon-on-Tyne	5,290 10 0
A. Elcoat, Bearpark, Co. Durham	4,680 0 0
Elliott Bros., Newcastle	4,780 0 0
W. Hall (Contractors), Ltd., Gateshead	5,190 0 0
*J. S. Hetherington, Newcastle ...	4,530 0 0
Harry Kindred, Sunniside, Co. Durham	4,928 3 6
Long & Christie (Builders), Ltd., Newcastle	5,364 0 0
Noble & Son, Ltd., Newcastle ...	5,040 0 0
Nordmann & Sons, Ltd., Dunston-on-Tyne	4,810 0 0
A. R. Robertson, Blyth	5,140 18 0
G. Robertson, Ltd., Newcastle ...	4,590 0 0
Wm. Spetch, Gosforth, Newcastle	4,884 0 0
F. T. A. & R. Veevers, Cleadon, Co. Durham	4,854 0 0

Northwood.—Additions to the Primary school, for the Middlesex E.C. Mr. H. G. Crothall, F.R.I.B.A., County Architect:—

Y. J. Lovell & Son, Gerrards Cross	£3,968 0
W. S. Try, Cowley	3,956 18
G. Challis & Co., Ltd., Brentford	3,950 0
A. & B. Hanson, Ltd., Southall ...	3,914 0
Harry Neal, Ltd., Northwood	3,846 0
J. C. Rackham, Harrow Weald	3,820 0
‡G. Godson & Sons, Ltd., Kilburn	3,686 0

Portsmouth.—Concrete lock-ups, etc., Richmond-road. Messrs. Thomas & Wilkins, architects and surveyors, 30, Landport-terrace, Southsea:—

John Lay & Co., Portsmouth	£1,750 0
F. Bevis, Ltd., Portsmouth	1,575 0
F. H. Jordan, Ltd., Southsea	1,549 0
S. A. Evans, Southsea	1,467 10
H. Jones & Son, Southsea	1,258 0
G. E. Sutton, Southsea	1,017 10
*C. C. Coles, Portsmouth	987 0

Phone PARK 1880 for
HIGH CLASS
PARQUET and WOOD BLOCK FLOORS
in various woods and thicknesses
PORTABLE and SPRING DANCE FLOORS
Ask for Booklet
TURPIN'S PARQUET FLOORING CO.
75, Notting Hill Gate, London, W 11

WHY HAVE DOORS THAT BANG!
"ODOORO"
FITTED TO YOUR DOORS WILL
PREVENT SLAMMING & RATTLING
THE Fitting for Every Home and Office.
WILL LAST A LIFETIME.
EASILY FITTED TO ANY DOOR.
Made in four sizes—1-2-3 & 4 inch.
For particulars apply:—
C. LOVE & SONS, BEMBRIDGE, I.W.

HOSPITAL & SCHOOL STOVES
SOLE MAKERS OF
WRIGHT'S IMPROVED AND ALSO
SHORLAND'S PATENT WARM AIR
VENTILATING PATTERNS.
GEO. WRIGHT (LONDON) LTD
19 NEWMAN ST OXFORD ST LONDON W.1
WORKS: BURTON WEIR ROTHERHAM

J. GLIKSTEN & SON
LIMITED
Specialities in
SEASONED
HARDWOODS
MAHOGANY WALNUT
JAPANESE, AMERICAN and
WAINSCOT OAK, TEAK,
WHITEWOOD, &c.
REGISTERED OFFICE AND WHARF
CARPENTERS RD.
STRATFORD
LONDON E.15
Telephone: EAST 3771 (5 lines)
Telegrams: GLIKSTEN 'PHONE LONDON

Ratby (near Leicester).—Concert room to Working Men's Club and Institute, in Stamford-street, for the Committee. Mr. A. Wright, architect, Leicester. Messrs. E. Carpenter & Son, quantity surveyors, Palace-chambers, Leicester:—

Toone, Richardson & Disney, Anstey	£1,749
Toone & Son, Anstey	1,703
S. J. Gibbs, Leicester	1,650
F. Elliott, Leicester	1,610
J. Elliott, Anstey	1,599
B. Shipman & Son, Ratby	1,583
T. W. Bilson, Leicester	1,509
Coltman Bros., Leicester	1,499
*S. A. Potter, Leicester	1,390

Scarborough.—New Albemarle Picture House, for the Londesborough Theatre and Picture House (Scarborough), Ltd. Messrs. Gray & Evans, architects, 51, North John-street, Liverpool:—

*Shepherd & Son, York.

Steelwork—
*Redpath, Brown & Co., Ltd., Edinburgh.

Plumber—
*J. H. Shouksmith & Sons, Ltd., York.

Painter—
*Bellerbys, Ltd., York.

Terra-cotta—
*Leeds Fireclay Co., Leeds.

Slater—
*Dawber Townsley & Co., Hull.

Shaw.—Structural alterations and sanitary conveniences to the Pine Apple Hotel, Rochdale-road:—
*E. Lord & Sons, Shaw.

Southam.—16 houses for the R.D.C. Messrs. Quick & Lee, architects, 11, Waterloo-place, Leamington Spa:—

H. Wells-Lawrence, Kenilworth	£9,496
Kelley & Son, Foleshill	9,308
A. T. Kimberley, Banbury	8,751
W. & A. Collisson, Banbury	8,522
F. G. Watson, Southam	8,160
Evan O. C. Howells, Ltd., Coventry	8,120
Standbridge & Parker, Leamington Spa	7,600
*T. Bates & Son, Coventry	7,422

Wallasey.—50 tons of mild steel underbracing for the New Brighton promenade pier, for the C.B. Mr. L. St. G. Wilkinson, Borough Engineer:—
*Wm. Cubbin, Ltd., Birkenhead £1,758

Whetstone.—New parish hall, adjoining All Saints Church:—
*Way, Ltd. £4,141 10

Winchmore Hill.—Additions to Winchmore School, Highfield-road, Winchmore Hill, for the Middlesex E.C. Mr. H. G. Crothall, F.R.I.B.A., County Architect:—

W. Lawrence & Son, Ltd., London	£7,592
H. Knight & Son, Tottenham	7,473
G. Groves & Son, Tottenham	7,464
Leslie & Co., Ltd., Kensington	7,461
A. Monk, Lower Edmonton	7,360
C. Miskin & Sons, Ltd., St. Albans	7,360
J. Stewart & Sons, Tottenham	6,909
G. Godson & Sons, Ltd., Kilburn	6,800
‡C. J. Newby & Bros., Southgate	6,719

Woking.—12 cottages at Lower Knaphill, for the U.D.C.:—
*Guildford & District Guild of Builders, Ltd. £377 5 per house.

J. J. ETRIDGE, Jr. Ltd
SLATING AND TILING
SLATE MERCHANTS
CONTRACTORS
Inspections and Reports made on
OLD OR FAULTY ROOFS
in any part of the country.
Telephone: Bishopsgate 1944/5, or write.
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.2

OAK FLOORING
WAINSCOT OAK
SQUARE-EDGED OAK
MAHOGANY, TEAK
WHITEWOOD, ETC.
SYDNEY PRIDAY
&
SNEWIN LTD.
Oak Specialists & General Hardwood Merchants
OAK WHARF, RAVENSDALE RD., N.16
Phone: CLISSOLD 6254 (3 lines)

MODERN SANITATION
without Sewers or Drains
ELSAN Chemical Indoor CLOSET
B. ELSAN MANUFACTURING CO.
34/35, HIGH HOLBORN, LONDON, W.C.1.

FITZPATRICK & SON
MASONS & PAVIORS
PAVING WORK OF EVERY DESCRIPTION
Largest stock of Second-hand and Redressed (equal to new) Granite Setts in London, at Rock-bottom Prices.
Rectangular and Crazy York Paving. Rockery Stone. Granite Chippings and Tarmacadam.
Spur Stones to order.
Quadrant Blocks in stock.
454 OLD FORD ROAD, LONDON, E.3
'Phone—EAST 4808

HIGH CLASS
FLOORINGS
OF EVERY DESCRIPTION.
WOOD BLOCK.
PARQUETRY.
SEASONED T.&G.
OAK, TEAK &
MAPLE FLOORINGS.
STEVENS & ADAMS LTD
POINT PLEASANT,
WANDSWORTH,
S.W.18.
'PHONE: PUTNEY, 4701 (3 LINES)

PORTLAND STONE
Stone from these Quarries was used in refacing Buckingham Palace & in the construction of Waterloo Station, Victory Arch, etc.
F. J. Barnes, Ltd. Quarry Owners. Office & Works: Portland, Dorset.
London Office: 25, Nine Elms Lane, S.W.8.